THE

BRITISH JOURNAL

OF

CHILDREN'S DISEASES.

VOL. I. JULY, 1904. No. 7.

Original Articles.

ON THE RELATIONS OF EPILEPSY TO AMENTIA.

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FROM the standpoint of amentia, it has been usual to group together into one class all those patients in whom the mental defect was accompanied by epileptic (and often epileptiform) convulsions, and to apply to that class the term "*epileptic*" *idiocy* or *imbecility*.

But a closer examination reveals that this class is in reality a most heterogeneous one, and that, although in a certain proportion of the cases comprising it the epilepsy has the causal relationship to the amentia implied by this nomenclature, yet in the great majority no such relationship exists. It is with the various modes in which epilepsy may be associated with mental defect that this paper deals; for convenience the term epilepsy being used to include also those less frequent instances in which the convulsions are epileptiform and not truly epileptic.

The paper is based upon nearly 600 cases of amentia, in which the presence or absence of convulsions was specially investigated, and which were selected at random out of about 2000; in these the clinical condition, previous personal history, and often also the family history, were carefully inquired into. Convulsions were present in

about half of these cases. For the most part the cases were derived from institutions, but the very varied nature of these institutions has made it possible to deal with nearly every variety and degree of amentia, and thus to draw more general conclusions than would have been possible had the scope of the inquiry been more restricted. They embrace patients from Darenth Asylum, where the lowest degrees of amentia are met with; from Earlswood Asylum, where there is a larger proportion of milder and improvable cases; from the London County Council Asylums at Cane Hill, Colney Hatch, Claybury, and Hanwell, where many patients are of a still milder degree of mental defect, being simply incarcerated as a result of epileptic violence or actual insanity; and, lastly, from the very mildest grade of all within special training schools or homes.*

Of course, only a selection of cases, but a random one, has been dealt with from each of these institutions, so that the figures cannot be taken as indicative of the real extent to which the different varieties of amentia relatively occur; but since each case has been carefully classified according to its variety and degree of amentia, it is believed that they will at any rate give a fairly accurate idea of the extent to which convulsions occur in each of the groups examined.

It is perhaps desirable to state that the term amentia is a generic one, comprehending all the varieties and degrees of mental defect which are due to imperfect or arrested development; it is thus distinct from insanity—the abnormal action of the mind,—and dementia —the failure of the mental powers due to degenerative processes. Further, that amentia is divisible into two chief groups: *Primary,* in which the condition is one of *imperfect development* due to a disability inherent in the embryonic rudiment, the result of morbid heredity; and *secondary,* in which mental development has been *arrested* by some accidental and external cause. Of each of these groups there are several clinical varieties, also varying degrees of mental deficiency. As indicative of the three chief degrees the terms idiocy, imbecility, and feeble-mindedness are used.†

Briefly, the relationship existing between epilepsy and amentia is of three kinds, as follows:

1. *Cases of primary amentia in which epilepsy occurs as a mere complication.*

* I am greatly indebted to the respective medical superintendents of these institutions for their uniform courtesy in giving me access to the patients under their care.

† See 'Practitioner,' September, 1903, for a general account by the writer of the groups, varieties, and degrees of amentia.

2. *Cases of idiopathic epilepsy causing amentia,*
3. *Cases of gross cerebral disease causing epilepsy and amentia.*

It is in this order that they will be considered.

Group 1.

Primary Amentia complicated by Epilepsy.

Table I shows the extent to which epileptic convulsions occur in primary amentia. From this it is seen that out of 514 cases epilepsy was present in 211.

Probably this is somewhat too high a proportion for primary amentia generally, since a greater percentage of the worst cases will naturally be found in institutions, and we have no reliable statistics of the number of milder cases at large (feeble-minded and high grade imbeciles). Nevertheless, by classifying the cases examined according to the degree of defect present it is possible to arrive at the real percentage in the group.

Thus, leaving out of consideration for the moment those cases complicated by gross cerebral lesions, since these would introduce error due to selection, it is found that the percentage of epileptics is as follows:

In the *feeble-minded*	...	11 per cent.
„ *imbeciles* ...	...	42 „
„ *idiots* ...	...	56 „

From which it follows that, roughly speaking, 36 per cent. of primary aments are epileptic.

Or, considered in relation to their clinical variety, the percentage of epileptics is:

In the *simple variety*	...	37 per cent.
„ *microcephalics*	...	40 „
„ *Mongolians* ...	...	13 „

The presence of a gross brain lesion, whether due to a developmental anomaly or to a superadded morbid process, increases the proportion of epileptics enormously, since, taking these by themselves, 70 per cent. were found to be liable to convulsions. This, perhaps, is not surprising; and, since the relations existing between gross cerebral lesions and epilepsy will be more fully referred to in Group 3, it is unnecessary to say more regarding these cases in this place. I would, however, like to emphasize the fact that in the group we are now considering, although such gross lesions are possibly concerned with the greater prevalence of epilepsy, they have no relation to the amentia, but are simply accidental and superadded

complications. Here the real cause of the mental defect is a neuronic imperfection, as has been fully demonstrated microscopically; the gross developmental abnormalities are simply a further and more intense manifestation of such imperfection; the pathological processes are superadded morbid conditions to which it is not surprising that an imperfectly developed brain should be more than usually prone.

And it may not be out of place to remark of those *without* gross lesions that there is abundant evidence as to the amentia being really primary, although the great prevalence of epilepsy amongst them might almost lead one to think that they were really cases which should come into the next group, where the amentia had been produced by the epilepsy. That this, however, is not so, and that the convulsions are merely coincident and not causal, is fully demonstrated by the careful inquiries which I have made into the family and personal history and by the examination of the patients themselves. It is true that in the absence of any particulars of the family history or of the mental state of the patient in early life, the diagnosis between these two groups may be extremely difficult or even impossible; but ample data, aided by a careful examination, will in most cases solve the question, which, indeed, is of considerable importance when a case comes under observation for the first time and an opinion has to be given as to the prospects of improvement under special training. The chief points of difference between all the groups will be seen by reference to Table II (p. 305).

To what, then, are we to attribute the great prevalence of epilepsy in patients suffering from primary amentia? The fact that the presence of gross lesions so largely increases the liability to fits might suggest that in every case some coarse lesion of the brain is really present, even when not clinically indicated, seeing that the prevalence of fits increases with the degree of amentia. Such a suggestion, however, is not borne out by post-mortem examinations. It is true that in these cases one does occasionally discover after death coarse lesions which have given no indication of their presence during life, and undoubtedly the post-mortem examination of all cases now classed as simple, microcephalic and Mongolian would result in the transference of a certain number of them to the other group. The proportion so transferred, however, could not be a large one, since experience shows that in the great majority of these patients there is no definite lesion recognisable by the naked eye.

Such a presumption, therefore, cannot account for the prevalence of epilepsy to the extent of 36 per cent. of these cases, and, indeed,

the real solution can only be found in the cause and morbid process underlying epilepsy in general, since these cases are in fact amentia accompanied by epilepsy. As to that cause we know practically nothing, and it is beyond the scope of this paper. Assuming, however, that it is related to a functional instability of the cortical nerve cells, it is not surprising that such an imperfection of function should co-exist in a large proportion of patients suffering from a condition of which we know the essential substratum to be an anatomical imperfection of the cortical neurones.*

With regard to the convulsions themselves, as far as could be ascertained these were in every case typically epileptic, and in a few of the merely feeble-minded a premonition or definite aura existed. Amongst the lower degrees the mental condition naturally precluded any inquiry on this point, but trained attendants often professed to be able to foretell the onset of a fit by the appearance of the patient. The severity of the attacks was most variable, some being of the mildest possible type, others exceedingly severe and protracted; they were nearly always of the major variety, although in a few cases minor attacks also occurred.

The frequency of the attacks was also subject to much variation; thus in some cases they first appeared in the early months of life and thence continued almost daily during the existence of the patient. In other instances, after frequent fits during many weeks or months of early childhood, the patients remained free for several years, then to have a few more which were again followed by years of quiescence. In yet other cases, after an initial series of fits there was no recurrence. In some of these patients the attacks occurred with extreme rarity, and I have known several instances where only two or three had occurred in twenty years or more. In view of cases of this latter kind, which are, however, exceptional, it is hardly safe to reckon on the absence of epilepsy in any particular patient suffering from primary amentia, although the epilepsy makes its appearance as a rule within the first or the second decades of life.

The effect of the convulsions is much the same as in the ordinary individual, and appears on the whole chiefly to depend upon the severity and frequency of the attacks. If both severe and often recurring, the patient rapidly loses even his limited acquirements, whilst, if slight and seldom, the effect may be infinitesimal. But even in these milder cases in which no superadded degradation results, the presence of the epilepsy renders the prospects of im-

* Hammarberg, "Studien über Klinik und Pathologie der Idiotic"; Tredgold, "Pathology of Amentia," Mott's 'Archives of Neurology,' vol. ii.

provement under special educational methods much less hopeful. Probably this is due not so much to the actual convulsive attacks as to the unstable condition of the higher level cortical cells, of which their presence is an indication.

There is one other condition which often complicates the milder degrees of primary amentia, and which, although not truly epileptic, nevertheless has such a striking resemblance to that condition that it may here be referred to, namely, a particular form of insanity. The attack consists of a sudden and violent emotional outburst, in which the patient will rush about gesticulating, shouting, abusing, and smashing everything within her path. It will often be found that somewhat similar outbreaks of lesser duration and violence, often called "fits of temper," have preceded these severe ones, and the difference between the minor and major outbreaks is probably rather one of degree than of kind. In the latter, however, instead of

TABLE I.—*Primary Amentia complicated by Epilepsy.*

Total number of cases examined, 514.

	Variety.	Feeble-minded.		Imbecile.		Idiot.		Totals.	Percentage with epilepsy.
		With epilepsy.	Without epilepsy.	With epilepsy.	Without epilepsy.	With epilepsy.	Without epilepsy.		
No indication of gross cerebral lesions.	Simple	11	84	121	159	20	9	152 252	37%
	Microcephalic		3	2	5	12	13	14 21	40%
	Mongolian		1	2	8		3	2 12	13%
	Totals	11	88	125	172	32	25		
	Percentage with epilepsy	11%		42%		56%			
Complicated by gross cerebral lesions, either A Developmental anomaly; B Secondary morbid process. (These are not the cause of the amentia, but simply complications.)	Porencephalic, sclerotic, vascular, toxic, hydrocephalic	2	3	23	13	18	2	43 18	70%
	Percentage with epilepsy	40%		64%		90%			

being of short duration, the attacks last for hours and even days, and no other name can be applied to them than that of acute mania.

The analogy between such psychic convulsions and the motor disturbances of epilepsy lies in their sudden spontaneous onset and equally sudden termination; also in the fact that although consciousness in the ordinary meaning is not lost, nevertheless the patients are for the time being quite oblivious of their surroundings, and on their recovery frequently affirm their complete ignorance of all that has passed during this period. Further, that such attacks are often followed by a period of dull, listless lethargy very similar to that occurring after epilepsy.

It is possible that the sudden outbreaks of passion and violence which are so common in the lower grades of primary amentia are of a similar nature.

Group 2.

Idiopathic Epilepsy causing Amentia.

In this group of cases the epilepsy is not a mere accompaniment, but is the actual cause of the mental deficiency, and to it, therefore, the term "epileptic" imbecility and idiocy should be restricted.

It is common knowledge that frequently repeated severe convulsions, or even minor attacks, may give rise to dementia, the anatomical basis of which is a degeneration of the same cortical cells and fibres as are imperfectly developed in amentia. It is easily understood, therefore, if neuronic degeneration may thus be produced, that the development of those neurones which is yet incomplete may be arrested.

So that, whilst it may not be possible to enumerate all the factors which are concerned in producing dementia, in the main they are severity and frequency of the convulsive attacks; whereas for the production of amentia, a third factor also is requisite, viz. early onset.

Now this third factor—early onset—exists in a considerable proportion of epileptics, and Sir William Gowers states that in 12·5 per cent. of cases the convulsions make their first appearance before the age of three years.* But in many of these, although the epilepsy persists throughout life, the attacks are slight and repeated at infrequent intervals, so that there is but little effect upon the general intelligence of the patient. In a certain proportion, however, the

† Sir W. R. Gowers, art. "Epilepsy," Clifford Allbutt's 'Syst. of Med.,' vol. vii.

attacks are both severe and frequent, so that the mental development of the patient becomes arrested, and, whilst his body develops, his mind is no more advanced than that of the imbecile or feeble-minded person.

With regard to the proportion of epileptics so affected I can give no actual figures, but it is probably not more than about 5 per cent. Likewise with regard to the relative proportion of these epileptic imbeciles to all cases of amentia my figures are only approximate, owing to possible errors due to selection of cases; but I find that about 3·5 per cent. of my cases of amentia are of this nature.

Allusion must here be made to the effect of *teething convulsions* in causing arrest of mental development—a cause frequently alleged by the parents, at all events. In an inquiry which I made into the causes of amentia I found this factor to occur in 6·5 per cent. of all cases, but in four fifths of these it was found that there was a well-marked morbid heredity, and that the patients presented numerous stigmata of degeneracy; that, in fact, they were in reality primary aments, the teething convulsions being but the first manifestation of an accompanying epilepsy. In the remaining fifth of the cases the convulsions were probably due to idiopathic epilepsy; there was no primary amentia, but secondary amentia induced by a continuance of the fits.

The important differences between these two groups of cases will now be apparent, especially with regard to their prognosis. I have already mentioned that epilepsy complicating a case of primary amentia even of mild degree renders education much more difficult, but in the present group this difficulty is increased a thousandfold; indeed, if the mental defect is at all pronounced, it is almost hopeless to attempt special training. The reason of this is obvious: if the convulsions have been sufficient to produce amentia, in the majority of cases dementia is only a question of time, since degeneration is the real underlying process, the arrest of development being but an incident.

A summary of the differences between these groups will be found in Table II, but it may here be remarked that the diagnosis depends upon a careful consideration of several points, and can rarely be made from any one of these singly. Briefly these are: The *family history*, morbid heredity being usually much more pronounced in Group 1 than in Group 2; the presence of *stigmata of degeneracy*, which are never prominent in the secondary amentia induced by epilepsy, but are pronounced in all but the mildest degrees of primary amentia;

the *condition of the patient prior to the fits*, which will have been normal in Group 2, whilst in Group 1 it often happens that indications of mental defects have been observed; and lastly, the *nature of the fits* themselves, which in primary amentia tend on the whole to be less frequent and severe than in the true epileptic aments; also, in the latter, the fits will have been present from an early age.

Group 3.

Gross Cerebral Lesions causing Epilepsy and Amentia.

It is now necessary to consider a group of cases of an entirely different nature, namely that in which gross disease of the brain is the essential condition to the presence of which both epilepsy and amentia are due. In this class the most searching inquiries fail to reveal the presence of any morbid hereditary influences, the patients possess no stigmata of degeneracy, and prior to the onset of the pathological process to which their condition is due, their bodily and mental development has been in every way perfectly normal. In these patients, therefore, the epilepsy and amentia are purely secondary, accidental, and symptomatic of some underlying brain disease, and they must be carefully distinguished from the secondary epileptic aments of Group 2 and from the primary aments of Group 1; although, as has been remarked, the primary condition may be complicated by similar gross lesions.*

The pathological processes which produce these lesions are many and varied; broadly, however, they may be divided into two classes, viz. *Vascular* and *Toxic*. In the *vascular* group the process is either hæmorrhage, thrombosis, or embolus, which may be brought about by asphyxia neonatorum, trauma, whooping-cough, or one or other of the specific fevers. The final forms assumed by the lesions in these cases, as seen post mortem after the lapse of several years, are cysts, localised softening or atrophy, areas of sclerosis, porencephaly, and chronic meningo-encephalitis. In the *toxic* group the local process may be part of an infectious disease like scarlet fever, measles, small-pox, or typhoid fever; it may be due to the extension

* It may be noticed that there is a group of cases midway between these two extremes, where, notwithstanding some slight degree of morbid heredity, the mental development appears to run a normal course until the advent of one of these pathological processes. In such cases arrest of further development almost invariably follows; but the effect of the lesion seems to be rather contributory than causal, and the amentia really to be due to deficient vitality of the cerebral neurones which becomes manifest under the additional stress; it is therefore primary.

of an otitis or rhinitis; or it may be a direct primary infection of the cortical cells (polio-encephalitis acuta of Strümpell). It is probable that many cases of "infantile hemiplegia" are of this nature. In these cases the final lesions take the form of localised softening, cysts, sclerosis, meningo-encephalitis, and occasionally hydrocephalus.

Now, as elsewhere remarked, it is probable that the number of children in whom such pathological conditions as these occur is not inconsiderable, and a certain proportion so affected die; others, but only a few, appear to recover completely; whilst in yet others death does not take place, but a permanent legacy remains in the shape of a gross cerebral lesion.

The effect of this lesion upon the patient, however, is very varying, and three phenomena may result, either singly or in combination; these are *amentia, epilepsy,* and *paralysis.* Thus in some patients there simply results amentia, often of a mild grade, without either epilepsy or paralysis. In others there is some degree of paralysis, without amentia or epilepsy, and in others epilepsy alone. On the other hand there may be various combinations of these conditions, and we may have paralysis + epilepsy − amentia or paralysis + amentia − epilepsy, and lastly *amentia + epilepsy with or without paralysis.*

It is this latter group only with which we are here concerned, but it will not be out of place to briefly consider why such different clinical results should supervene on these lesions. The subject is of great interest, and material for such an inquiry abundant; it must nevertheless be admitted that hitherto the amount of exact microscopical work which has been done in this field is too small to enable the question to be fully answered. There are, however, certain features of the lesions which obviously have considerable bearing upon the point; these are (1) the time of its occurrence; (2) its site; (3) its extent; and (4) its nature; and these may with advantage be alluded to.

Time of occurrence.—It is an accepted fact that no regeneration of nerve-cells takes place within the central nervous system, and yet clinical experience constantly shows that lesions can to a certain extent be recovered from. This is, no doubt, partly due to the fact that some cells which were injured but not destroyed by the morbid process recover sufficiently to again resume their function. In other cases, however, there are reasons for thinking that the partial recovery is due to the bringing into play of other cells to replace those which have been rendered *hors de combat.* Now during child-

hood the deeper layers of the cortex cerebri contain large numbers of neuroblasts which lie between and among more fully-developed nerve-cells; indeed, such immature cells may often be found as late as middle life. So that it seems to be highly probable that the normal brain is supplied with neuroblasts far in excess of the number which develop into mature nerve-cells; that, in fact, there is a potentiality of cerebral development which is never attained by the individual. In course of time, doubtless, the developmental possibilities of these immature cells become progressively less, but at an earlier stage of ontogenetic history, and before lamination of the cortex has taken place, there seems no reason why their inherent capabilities should be appreciably less than others like them amid which they lie, and which subsequently develop into perfect nerve-cells; and it is quite possible that even for a time after lamination their power of development may be retained. In the ordinary course of events, however, many of these neuroblasts are not called into use owing to the fact that Nature provides more than become developed by the stimulus of incoming impressions and those varying factors which go to make up education; but should the more fully-developed cells be by any process destroyed, then it seems likely that under certain conditions these neuroblasts may rise to the occasion and take their place—in other words, that *compensation* may result. And it even seems possible that this compensation may be brought about by the development of corresponding immature cells of the opposite hemisphere to that diseased when the two sides have a function in common.

Such a view is by no means entirely hypothetical, but is strongly supported by many clinical facts. Thus many cases have been recorded in which the greater part of one cerebral hemisphere was practically useless by reason of porencephaly, cysts, hemiatrophy, etc., and yet the mental and motor defect was but slight; indeed, in a large number of these cases the clinical signs (particularly of paralysis) are astonishingly insignificant when compared with the state of the encephalon. Moreover, in one case which I have described, and in which practically all the large motor-cells (Betz) of the left leg area had failed to develop consequent upon a vascular lesion during birth, I was able to demonstrate a compensatory increase in the Betz cells of the opposite hemisphere. If, therefore, compensation and recovery can take place to this extent with regard to motor function, it does not seem unjustifiable to conclude that the destruction of those cells which subserve the higher mental processes may in a similar way be partially made good, and many otherwise

puzzling facts become explicable on this view. Compensation, however, is rarely, if ever, perfect, and some defect will permanently remain, but it is obvious that the degree of this will largely depend upon the developmental period—the age—at which the lesion occurs, upon the amount and kind of special educational treatment received, and upon some other features of the lesion to be now referred to.

Site of lesion.—It is clear, from our knowledge of cortical localisation, that the site of the lesion will be an important factor in influencing the result. The presence of paralysis is readily accounted for if the lesion has involved any part of the efferent tract. Amentia is explained on the assumption that the pre-frontal, frontal, or parietal lobules have been affected, since it is now well known that these regions are chiefly concerned in psychological processes.* It must, nevertheless, be remembered that since intellectual development takes place in response to impressions received from without, a lesion of sufficient extent in a special sensory area of the immature brain may suffice to produce subnormal psychical development by the cutting off of these impressions. With regard to epilepsy, the influence of the site of the lesion is not in every case quite so clear. It is certainly possible, and of common occurrence, for a lesion in or near the cortical motor centres to cause epileptic convulsions without paralysis, and this is probably because slight damage and disturbance of function have been produced without any actual destruction; in such cases paralysis may subsequently supervene, or in such a situation a lesion may cause epilepsy and paralysis simultaneously. On the other hand, it sometimes happens that lesions situate elsewhere give rise to epilepsy, and then possibly such may be brought about either by reflex irritation or by an increase of intra-cranial pressure causing functional disturbance.

Extent of lesion.—The influence of this will be sufficiently obvious. It is, however, necessary to remember that in the rapidly developing brain of the newly-born the arrest is not limited to the area actually involved by the morbid process; but that groups of cells and areas functionally and anatomically correlated elsewhere may also be affected. Other things being equal, the involvement of both hemispheres is naturally of more serious import than where one only is affected.

Nature of lesion.—It might be expected that, apart from its incidence as to time, site, and extent, it would matter but little what

* *Vide* Bolton, "Histological Basis of Amentia and Dementia," Mott's 'Archives of Neurology,' vol. ii; also Tredgold, *loc. cit.*

was the actual nature of the initial morbid process. This, however, is not so, and the later state of the lesion, and therefore the clinical condition of the patient, appears to be largely influenced by this factor. I have already mentioned the chief conditions in which these different morbid processes finally culminate, but from our present point of view—the effect upon the patient—it is more important to look at them from another aspect, viz. according to whether the lesion becomes *stationary* or continues *active*, and has a tendency to extend. Our knowledge is not as yet sufficient to enable us definitely to say which of these results will happen in any particular initial process since such probably depends upon an aggregation of at present unknown factors. In general, however, I am inclined to think that the small lacerations of brain tissue due to hæmorrhage, the softenings resulting from the thrombus or embolus, and the destruction of cells due to polio-encephalitis, tend to become definitely localized and shut off; whilst such conditions as meningo-encephalitis and hydrocephalus are more liable to remain active and to spread; but this is largely conjecture. It will readily be conceived how the stationary or active condition of the lesion will affect the patient, and that whilst compensation may occur in the former group as a result of special training, it is much less likely to happen should the pathological process continue active.

Considerations of this kind will help us in some measure to understand why these gross cerebral lesions should be attended with such different clinical results, and why in some patients the effect is but trifling, whilst in others severe amentia, epilepsy, and paralysis, singly or in combination, may follow.

But the amentia is not always thus the *direct* result of the lesion. I have now seen many cases in which the only effect of this was to produce epilepsy without any mental affection whatever; and yet after the lapse of a few years pronounced amentia, subsequently passing into dementia, had occurred. In such cases inquiry has always shown that the convulsions have been severe and of frequent recurrence, and it appears to be to this that the arrest of intellectual growth is really due, precisely as happens in the cases referred to in Group 2. And even where amentia results directly from the lesion, it will be greatly intensified by the presence of severe epilepsy.

On the whole, in these cases in which gross lesions exist, the prognosis as to chances of amelioration will be largely dependent upon whether convulsions are present or not. In their absence suitable education will certainly lead to improvement, often to a

surprising extent, and it is quite common for these patients to be trained sufficiently to earn their own living, and even to do really excellent manual work.* In the presence of severe convulsions, however, or even of frequent *petit mal*, improvement must not be expected, and progressive deterioration is usually only a question of time.

A few remarks may be made regarding the convulsions in these cases. Notwithstanding the generally one-sided position of the lesions, they are, in the great majority of the cases, quite indistinguishable from the major attacks of ordinary idiopathic epilepsy. In a small proportion of cases, however, there is no loss of consciousness, and the convulsions have a distribution corresponding with the localisation of the lesion, being, in fact, *epileptiform* or Jacksonian. But even in these cases attacks of *petit mal* also often occur, and in course of time it usually happens that the fits gradually become more generalised, that consciousness is lost, and that they pass into the ordinary variety, so that it is probable that if more accurate data were forthcoming of the earlier history of these patients it would be found that the initial fits were more often epileptiform than now appears. Their frequency and severity is subject to the same variations as in the preceding groups. Exceptionally it may happen that the motor disturbance in these cases takes the form of a constant, coarse, rhythmic tremor, which may affect one or more limbs or even the entire body. This is often termed "chorea," but it is more akin to the tremor of Disseminated sclerosis or Paralysis agitans. The condition, however, is so rare as to have little practical importance.

In conclusion, it must be remembered that the association of mental defect with convulsions also occurs in juvenile general paralysis and (rarely) in infantile cerebral degeneration. It is desirable to mention this because a mistake in diagnosis is quite possible. But these conditions are purely degenerative, and their prognosis is absolutely hopeless.

* An interesting case of this nature is mentioned by Dr. Shuttleworth in the March number of this Journal, p. 110.

TABLE II.—*Showing the Points of Difference between the Three Groups in which Epilepsy and Amentia co-exist.*

	GROUP 1. Primary amentia complicated by epilepsy.	GROUP 2. Idiopathic epilepsy causing amentia (secondary).	GROUP 3. Gross cerebral disease causing epilepsy and amentia (secondary).
Morbid heredity	Pronounced	Less pronounced	Absent.
Condition of patient before the fits	Some degree of amentia or general backwardness usually noticed	Normal	Normal. Onset of fits can generally be traced to some definite morbid process affecting brain.
Nature of fits	Epileptic. Usually milder and less frequent than Group 2	Epileptic. Severe and frequent	Epileptic. Occasionally epileptiform, rarely constant, rhythmic tremor.
Condition of patient after fits have made their appearance	Degree of amentia often much greater than would be accounted for by the severity and frequency of fits.	Amentia usually mild, but much dementia	Considerable amentia may be present with mild and infrequent fits.
	Paralysis may be present also if a gross lesion co-exists	No paralysis	Paralysis often present.
Stigmata of degeneracy	Marked (except in highest grades)	Slight	Absent.
Prospects of improvement under special training.	Dependent upon severity and frequency of fits, but on the whole better than in Groups 2 and 3	Practically none	Dependent upon time of occurrence, site, extent, and nature of lesion, and upon severity and frequency of fits. Usually intermediate between Groups 1 and 2.

THE TREATMENT OF VESICAL CALCULUS IN CHILDREN.

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AT the present time, when the operation of lithotrity or rather litholapaxy has been so perfected and extended so as to include the treatment of vesical stone in children, it may appear to some of your readers that the final word has been said on the subject, *i. e.* that the operation of lithotrity is that of "election" and that lithotomy, and by that I mean supra-pubic lithotomy, should be reserved for

exceptional circumstances. In fact, I am not sure that the enthusiastic lithotritist is prepared to admit any exceptions to the rule.

In approaching the subject, therefore, I do so fully recognising that the remarks I offer for consideration are open to the criticism that they are the outcome of the somewhat limited experience that can be obtained at a London children's hospital (where vesical calculus is by no means prevalent), while the accepted practice is largely the result of the enormous experience gained by surgeons practising in India. Nevertheless the results I have obtained have been so gratifying that they appear to justify a reconsideration of the subject.

It is only within recent years that the operation of lithotrity has been practised upon children, and although it has now reached a high stage of perfection—which, by the way, is in great measure due to the improvements that have been made in the instruments by which it is performed—yet medical literature points to the fact that during what may be termed the developmental stage, as is the case with many other recent surgical procedures, the experience has not been gained without risks, and it is easy to recall to mind many accidents that have been recorded in the medical press. Some of these have resulted from imperfect instruments, others may be more correctly attributed to faulty manipulations; and although accidents belonging to the latter class, such as over-distension with subsequent atony of the bladder, or actual rupture during the process of evacuation, may be disregarded as unlikely to occur if due care be exercised, yet this is not the case with complications arising from imperfect instruments. To this class belong (1) jamming of the blades of the lithotrite by *débris*, which if it cannot be dislodged prevents the instrument from being withdrawn; (2) bending of the instrument from overstrain; (3) breaking of one of the blades.

Any of these complications may necessitate supra-pubic cystotomy, and if the instrument has been bent great difficulty may be experienced, as it will probably mean that the bent blade will have to be filed off; on the other hand, if the instrument breaks the risk is considerable that the broken blade may penetrate the bladder-wall.

Doubtless with the recent improvements in the manufacture of small-sized lithotrites the accidents due to faulty construction have diminished, still the fact remains that they are inseparable from the operation. But apart from these disadvantages, other more important points require consideration in discussing the relative merits of supra-pubic lithotomy and lithotrity.

I would enumerate them under the following heads :

1. Which method is the more certain to result in a cure, or the less likely to be followed by recurrence of the symptoms ?

2. The relative risk ?

3. Which method entails the least suffering and the more speedy convalescence ?

With regard to the first point. It is, I believe, beyond question that a certain percentage of cases treated by lithotrity are not permanently cured, while it is extremely rare to meet with recurrence after lithotomy. The recurrence is either due to minute fragments of the calculus remaining in the bladder (*i. e.* the process of evacuation has been imperfect) and forming the nucleus of further trouble, or the irritated condition of the mucous membrane after lithotrity may be such as to favour the formation of another calculus, particularly if the urine is alkaline and phosphatic. That the recurrence cannot be attributed to the descent of particles from the kidney is clear, or we should find that recurrence would be met with more frequently after lithotomy.

In the hands of those specially skilled in litholapaxy this frequency of recurrence is doubtless reduced to a minimum ; but the fact that this minimum still exists proves that lithotomy is the more certain to result in permanent cure.

2. The relative risk ? In considering this point it is important to remember that the risk of supra-pubic lithotomy has been greatly reduced by modern aseptic methods, and it must not be forgotten that now-a-days the operation is largely reserved for the complicated cases of vesical stone, while lithotrity claims a large proportion of the simple cases, so that it is difficult to form an accurate estimate, but I believe it would be slightly in favour of the crushing operation.

3. Which method entails the least suffering and the more speedy convalescence ?

Let us first consider an ordinary case of vesical calculus—without complications such as cystitis. The expert lithotritist will claim that the child will be well and about in less than a week, and that after the operation will suffer no discomfort. When such a result is obtained, the operation may, without exaggeration, be described as ideal ; but how frequently do we find that much irritability of the bladder persists for a week or two, and often longer, with pain on micturition, and possibly the passage of small fragments which add to the distress ; and finally it is found advisable to administer a second anæsthetic in order to sound the bladder or apply the evacuator in case some small fragment is causing the symptoms, which,

by the way, prolongs the convalescence. In such a case as the above, if treated by the supra-pubic operation, the bladder can be accurately sutured after the removal of the stone and the wound closed throughout, and healing by first intention will almost certainly be obtained and the patient will be well in a fortnight, while the additional advantage will be ensured that there are no particles to come away or to remain to perpetuate the trouble.

In order to obtain such a result it is safer to drain the bladder *per urethram* with a soft rubber catheter for four or five days after the operation: this causes some discomfort, but in most cases is well tolerated.

It may be urged against this method of procedure that sutures placed in the bladder wall have been known to ulcerate into the interior and to form the nucleus of a concretion. This objection is met by using an absorbable suture—fine chromic gut, and inserting the sutures by Lembert's method. I have treated six cases in this manner; in five union occurred by first intention, and in the sixth the wound leaked, and necessitated the removal of the stitches, and as cystitis was present at the operation it would have been wiser not to have attempted to suture the bladder, but to have drained it.

In cases in which cystitis is present, the risk of recurrence after lithotrity is considerably increased, as the cystitis is aggravated, and the treatment after the operation is unsatisfactory, as it may be impossible to wash out the bladder through a catheter without giving the child an anæsthetic. These cases are more certainly, and probably also more rapidly cured, by the supra-pubic operation and subsequent drainage of the bladder through the wound for a week or so. In a short time after the operation the cystitis generally subsides, with or without irrigation, and although the healing of the wound takes on the average about eighteen to twenty-one days, yet the result is eminently satisfactory, as the urine remains normal.

So far I have limited my remarks to the treatment of cases where the selection of the particular method is optional and is likely to be largely influenced by the preference, or what is much the same thing, the experience of the surgeon.

In certain cases, *i. e.* when the stone is unusually large or hard, it may be impossible, or, at least, inadvisable, to attempt to crush it. It is in these cases that an accident is so liable to result to the lithotrite if crushing be attempted.

Another condition necessitating the supra-pubic opening and

drainage is that troublesome condition of phosphatic deposit on the mucous membrane of the bladder.

It is almost unnecessary to point out that the supra-pubic operation is more easily performed in children than in the adult, as the bladder is an abdominal organ, and there is practically no risk of opening the peritoneum if the bladder is injected with four to six oz. of fluid before the operation is proceeded with.

In those cases in which it is necessary to drain the bladder it is a good plan to pass a suture through the bladder wall on each side of the tube. By tying the suture the bladder wall is drawn around the tube and thus effectually prevents leakage into the dressings, and the urine can be drained away into a bottle.

Clinical Memoranda.

CAPILLARY PULSATION IN URTICARIAL WHEALS.

By George Carpenter, M.D.

Urticaria in early childhood is one of the most common ailments, but capillary pulsation in the wheals is a decidedly unusual feature. For these reasons I would draw attention to a phenomenon—a marked capillary pulsation in the wheals causing alternate blanching and blushing synchronous with the heart beats, unconnected with aortic disease, but quite similar to that which can be so readily observed through a glass microscopic slide on the lips of patients with that disorder. The recent observation of a marked case of pulsating urticaria has brought the condition once more prominently to my notice, and it has induced me to place what I take to be an unusual condition on record. Thus, a small boy of $2\frac{1}{2}$ years, the son of a surgical friend, was sent to me with marked urticaria. It was of but one day's duration, the wheals were very large and prominent, and many of them surmounted by a diffused and clear exudate. Some were capped by tense bullæ. Capillary pulsation was a prominent feature in the various lesions, and factitious urticaria was observed.

The Society for the Study of Disease in Children.

A Meeting of this Society was held on Friday, May the 27th, 1904, at 11, Chandos Street, Cavendish Square, W., Mr. Walter Edmunds being in the chair.

A Case of Multiple Sarcomata of the Scalp in a child of two years was shown by Mr. Wilson for Dr. Edmund Cautley. In September, 1903, the right eye had been excised for glioma. One month previously lumps had been noticed on the head, which had grown rapidly. At present the new growths were numerous, large, and scattered over the scalp. There was also evidence of involvement of the left eye, and a purple discolouration of the eyelids on both sides was present. The face was of a waxy pallor and œdematous.

Mr. George Pernet described a case of multiple sarcomatous growths in the skin, in which the right eye was bulged forward, presumably from a primary growth behind it.

A Case of a Tumour occupying the Left Half of the Abdomen in a girl of six years was shown by Mr. Francis Jaffrey. She had suffered from pain in the left side of the abdomen, hæmaturia, and difficulty in micturition. The tumour was smooth and elastic, did not fluctuate, and was fairly movable. He was of opinion that it was a case of sarcoma of the left kidney, and asked as to the advisability of operative treatment.

Mr. Watson Cheyne agreed with the diagnosis, but thought that complete removal could not be looked for, as the pedicle of the kidney seemed to be involved.

Mr. Clement Lucas thought that, as the case was probably hopeless if left alone, an effort might be made to remove the tumour if possible.

The Chairman (Mr. Walter Edmunds) thought that an exploratory incision might be employed to determine whether the tumour was removable or not. He asked for particulars as to the history of such cases after operation.

Mr. Thomson Walker said that an increasing number of renal tumours were being removed from children with immediate good results, and with a good after-history, namely of three to five years in which no recurrence had taken place. Each case must be taken on its own merits, and if the tumour were examined from within the abdomen there would be a better chance of ascertaining whether it was removable, and whether there was likely to be a recurrence.

A Case of Status Lymphaticus was described by Mr. Hunter Tod. An infant of six months had been the subject of laryngeal stridor and died suddenly. Dr. Walter Emery showed the organs from this and another infant affected with the status lymphaticus. There was an enlargement of practically all the lymphoid tissues of the body, including the thymus, the glands (especially the mesenteric), the solitary follicles, and Peyer's patches in the intestine, the tonsils, and the adenoid tissue of the naso-pharynx. The spleen and tongue were normal, the latter not showing enlargement of

the circumvallate papillæ, which had sometimes been described as of diagnostic value. The thymus gland weighed almost exactly an ounce in each case, but there was no evidence of direct pressure on the vagus, the trachea, or the heart. He drew special attention to the marked thickening in parts of the intestinal wall from the overgrowth of lymphoid tissue.

Dr. E. P. Baumann confirmed this observation. He had seen two fatal cases, one an infant of three months and the other aged nine months. The first infant was brought to the hospital in a state of great respiratory embarrassment, cyanosed, and uttering peculiar respiratory sobs. Death soon ensued, and the thymus was found to weigh four and a half ounces. It lay chiefly on the right side, pressing on the heart, and it might also have pressed on the trachea, causing death directly from suffocation.

Mr. Thomson Walker said this was a very important subject, not only from the medico-legal point of view, but also from the surgical. One writer had collected ten cases in which death had occurred, at the commencement of chloroform administration, or during it, or immediately after the operation. In addition to the other changes mentioned, a hypoplasia of the arteries had been noted, leading to narrowing of the lumen.

Dr. Emery, in reply, said that one could not absolutely exclude pressure on the trachea from the post-mortem findings. The thymus might suddenly become engorged with blood and exert direct pressure on the trachea, and all signs of this might have passed off before the post-mortem examination.

A Case of Tuberculous Periostitis was shown by Mr. Lockhart Mummery. There was a fluctuating swelling on the middle finger of the right hand, and the right radius and right cheek were also the seats of tuberculous growths.

A Case of Paralysis of the Left Trapezius Muscle following an Attack of Herpes was shown by the Chairman (Mr. Walter Edmunds). The patient was a girl of six years who, three weeks after an attack of herpes affecting the skin over the left shoulder and the upper part of the left scapula, was found to have "winging" of the left scapula. This was found to be due to weakness of the left trapezius muscle, which responded neither to galvanism nor faradism.

A Case of Achondroplasia in a boy of twelve years was demonstrated by Mr. Harold Balme. As usual in this affection the membrane bones were unaffected, while all the long bones showed marked shortening.

Mr. A. D. Reid showed a series of skiagrams of this patient, with the following abnormal features: (1) The ends of the diaphyses were expanded. (2) Both humeri were bowed. (3) There was a lateral curve in the left tibia and fibula. (4) The ends of the diaphyses of the long bones were notched. And (5) The phalanges were short and broad.

A Case of Tuberculous Disease of the Elbow Joint, with Dislocation of the Upper End of the Radius, in an infant of fifteen months, was shown by Mr. J. Thomson Walker. Three months after a fall the elbow had become swollen and tender, and the child was treated at another hospital for fracture about the elbow, the arm being put up in splints, and later massage was used. Under this treatment the arm got steadily worse. Mr. Thomson Walker found the ends of the humerus, radius, and ulna to be markedly thickened, and the joint swollen. There was also thickening of the fifth

metacarpal bone of the left hand. As regards the diagnosis, he had to consider whether a fracture had ever been present, and whether syphilis might not be a factor in the case, as there was a history of numerous miscarriages. Under mercurial inunction and splinting the condition had almost entirely cleared up after four months. The patient then passed from observation, and some months later the joint was found to be much worse, and the upper end of the radius was dislocated forwards. Later there was definite evidence of tuberculosis in the joint.

A Girl aged Two Years, with Motor Paraplegia and with Absence of Speech, which might have been Congenital, or Syphilitic, or Secondary to Scarlet Fever and Diphtheria, was exhibited for diagnosis by Dr. Ewart. He demonstrated a method of using the reflexes (superficial and deep) as a means of exercising paralysed muscles, which he had not previously published.

A paper on **a Case of Perforated Gastric Ulcer** in a boy aged thirteen was read by Mr. Watson Cheyne and Dr. R. H. W. Wilbe (introduced). The patient had enjoyed good health until the onset of the illness, which was marked by severe abdominal pain about the umbilicus. He rapidly became worse, and after consultation the same evening it was decided to operate. The appendix was examined, found to be diseased, although not actively, and was removed. As the signs pointed to some rupture, the rest of the abdomen was explored, and over the front of the stomach some turbid fluid was found, and gas bubbled up. On further searching, a small, round perforation was found on the anterior surface of the stomach about an inch from the cardiac end, from which gastric juice and gas were escaping. The ulcer was treated in the usual way, and the boy made an uninterrupted recovery. They referred to the rarity of perforating gastric ulcer, apart from tuberculosis, at this age. Another point of interest was that a diseased appendix was found and removed, but the presence of gas in the abdomen showed that there must be some other lesion. Unless this sign had been regarded as conclusive they would not have discovered the ulcer, for its situation was so remote that every part of the intestines and stomach had been previously examined, and very careful searching was required to find it.

Mr. Clement Lucas was not quite sure from the history of the case that tuberculosis could be excluded as the cause of the ulcer. The condition was certainly a very rare one.

Dr. Porter Parkinson referred to a case he had met with in a child of two years, where death was due to a perforating gastric ulcer, and where post mortem no trace of tuberculosis could be detected in any part of the body.

Editorials.

THE TEACHING OF ELEMENTARY HYGIENE IN LONDON.

It is well known, though not sufficiently realised, that much of our mortality, especially in children, is due to popular ignorance on

simple matters of hygiene. Any effort, therefore, made to disseminate knowledge on such matters must command our respect and commendation. We thus recognise the debt of gratitude that London owes to the School Board for its inauguration of the Evening Continuation Classes. But, however grateful we may be to any lay authority that undertakes such pioneer work, it must be the duty of the medical profession to watch with the closest interest, and if necessary to criticise the methods used in an enterprise which so essentially concerns them. Unfortunately, however, of all the Government Departments that of Education is the most strikingly independent of expert advice. It is well known that these evening classes were established in the face of serious opposition. At the present time some apprehension is felt as to the attitude which our new educational authority, the London County Council, will adopt towards them, and we shall therefore take the opportunity of considering the subject in some detail.

In a number of schools classes are held in the subjects of Home Nursing and Hygiene. The average number present varies from fourteen to thirty or more. The age of the majority is from sixteen to twenty-two, though in some of the nursing classes there is a large proportion of older people. In the first subject twenty-four lectures are given, in the two sessions of the year, by a trained nurse or teacher. Half of these lectures may—but need not—be delivered by a medical man. In the second subject the two courses consist of thirty-two lectures, only medical men being recognised as teachers. Eight of these lectures are given to audiences consisting of only one sex. The lesson lasts one and a half hours, sometimes more but never less. This means, as the school is often some miles from the medical man's home, that a whole evening is given up to the work. He is paid one guinea for each evening.

First let us consider the audience. It consists chiefly of the youth of the lower classes. Whether this be the most desirable material to hand is beyond the scope of this article to discuss, but it should be remembered that any endeavour to interest such an audience in serious questions is by no means an easy task. Often there is manifest anxiety on their part to convey to the lecturer that, having outgrown schooldays, they are no longer subject to any restriction,

and, in fact, attend the classes only as a special favour. Again, the mingling of the sexes, which is the case in most of the lectures, cannot conduce to continuity of interest in any subject save one.

What should be the duration of the lesson to such an audience untrained to intellectual concentration? The experience of each of us in his student days may help us. How often was the last quarter of an hour otherwise than tedious in a lecture which lasted an hour or less, and in which there was a vital and personal interest in the subject-matter? What, then, shall be said of a Board of Education which refuses a grant except under conditions which render compulsory a lesson of an hour and a half's duration under the above adverse circumstances? We do not envy the unfortunate lecturer as he beguiles the time that has to elapse between the termination of the audience's profound interest in subsoil drainage and the striking of the clock that announces the earning of another grant. We understand that the decision of the Board of Education is inflexible on this question, which would seem to be clear to the meanest intelligence. We hesitate to credit this, and think that the course should be reorganised on very broad lines. For instance, if the two classes were combined—and we know of no valid reason why they should not be—four medical lectures to men and ten or twelve to women, twice a year, should be sufficient. This is exclusive of nursing details, such as temperature taking and bandaging, which can be taught equally well by trained instructors. A lecture of half an hour and a demonstration of a quarter of an hour, followed by three quarters of an hour for the practical work of those details, would cover all the points that can be taken in by such an audience, especially if the syllabuses be revised. We do not labour the folly of the mingling of the sexes in these classes—it is surely beyond dispute. Let anyone try to picture the last half hour of a lesson in the East End of London, especially next year, when, so we learn, lantern demonstrations will be in vogue, and but one opinion is possible.

Next, let us consider the lecturer. We think strongly that no course of lectures should be delivered on such important subjects save by qualified medical men. Not only so, but that these lecturers should be selected from men who have a practical knowledge of

disease, and especially with disease in children, and who are abreast with the latest teachings of medical science. The pay of a competent staff should be at least three times the present rate, or better still, they should be retained and given fixed salaries.

Lastly, we have to review the subject-matter. Our complaint here is two-fold. To begin with, the perspective shown in the arrangement of the syllabus is false. Consumption and its prevention is surely worthy of more attention than communicable skin diseases (exclusive of the exanthemata), yet both are allotted the same space and time. Does one lecture out of sixteen show an adequate recognition of the importance of infant feeding? It may be doubted whether it be necessary to devote an evening each to the consideration of such subjects as exercise, clothing, water, and personal hygiene, when all the few important points in each could be adequately dealt with at much less length. It may be that such errors arise from the fallacy of teaching the points of a subject to a popular audience in the order in which their discovery was made, in other words in much the same way as such a subject would be taught to a medical student. As an illustration let us take the subject of water supply. It is true that infection by means of water was only recognised after repeated experiments had demonstrated that the prevalence of certain diseases may be correlated with the impurity, or the reverse, of the water supply. But if one wishes to emphasise the occurrence of such infection and explain that it is brought about by careless bestowal of the ejecta of certain patients, it is by no means necessary to go into such problems as "the methods of purification of a town's water supply," "filter beds," "subsoil drainage," and so on. Else might we have the rising generation of the East End inquiring too closely into matters at home.

Then, again, much of the instruction recommended is not based on the latest opinions of the subjects under consideration. We know, for instance, of no warrant for the opinion implied in the heading, "Consumption, its relation to impaired vitality, the result of foul air and overwork in overcrowded rooms." What we do know is that deficient ventilation means more consumption, simply because it increases the opportunity of infection, which is a very different state-

ment. Indeed the teaching of the importance of ventilation seems very half-hearted throughout. Thus there is the remarkable statement that "*Sick* rooms must be ventilated by night as well as by day"; also that "to keep the air pure in a *sick* room it must be changed more than once an hour." When one reflects that the average space per person in the bedrooms of the lower classes is nearer 400 than 1000 cubic feet, it is clear that the ventilation thus directed would be only one-sixth of even the old-fashioned standard; what the *healthy* room is expected to have we dare not think. The ideal held out to the lower classes in this matter is hopelessly low. Hincke's-Bird's device of preventing draughts is emphasised, and models handed round to each class. Diagrams, interspersed with curious arrows, are shown, which, if accurate, would indicate a freedom of air entry between the room and the outside almost rivalling in its thoroughness that existing between the pharynx and duodenum. Again, although it is recommended to take children with "summer diarrhœa" at once to a doctor, the advice is stultified by a description of such treatment as the use of fresh whey, raw meat-juice, and egg water. Such minor points as the placing of an isolation sheet over the door of a sick room, and the use of carbolic oil, in spite of our present day knowledge that phenol in such a solution loses all its germicidal properties, do not commend themselves as showing much recent knowledge.

Let it be understood clearly that we give such criticisms as these in no carping spirit, but with a whole-hearted desire that the work be prosecuted in as efficient and thorough a manner as possible. We consider that the County Council has been given great opportunities for improving the health of London—opportunities that no body has ever had before—and that their responsibility is correspondingly great.

THE STATUS LYMPHATICUS.

From time to time cases of sudden death occur in children who are apparently in good health, in which the pathological changes are more or less uniform. These changes are hyperplasia of the retiform tissue throughout the body. Enlargement of the thymus, the

spleen, and the lymph glands are constant accompaniments of the disorder. Associated with these changes are cloudy swelling of the liver and kidneys. Nordmann, a Swiss, was the first to call attention to the condition, and instances have been reported in Europe and America during recent years, but such cases have not excited much attention in the United Kingdom. Although mainly a disease of childhood it is not unknown in adult life.

During the last session of The Society for the Study of Disease in Children two pathological specimens from the Paddington Green Children's Hospital have been exhibited; one from an infant of ten months in whom the prominent symptom during life was laryngeal stridor due to sucking in of the sides of the epiglottis, and who died after three months. Sudden laryngeal spasm occurred, accompanied with cyanosis, which was rapidly followed by extreme pallor together with pulselessness. In another child of eleven months who was free from laryngeal obstruction, and who died during the administration of chloroform, breathing suddenly ceased. It was found impossible to get the finger into the larynx, as the glottis seemed to be tightly closed. Suddenly it opened with a clicking sound and the respiration was resumed for a short time, followed by its cessation and death.

The infant was pallid throughout, and the pulse could not be felt at the wrist. Autopsy showed that in neither case had death occurred by asphyxia; the symptoms also pointed to cardiac failure. In both instances there was an enlargement of the thymus and hyperplasia of the lymphatic tissues.

Sudden death during or after the administration of chloroform is also well recognised as a possible accident in this condition of body; ten cases have been collected by Kundrat, and there are others recorded.

An opportunity is rarely given to diagnose the condition during life, but dyspnœa of unknown origin, dulness over the manubrium sterni, and unaccountable enlargement of the accessible lymph-glands are suggestive of the status lymphaticus.

What the cause of death is in such cases is debatable; there are two hypotheses: one of these that the thymus presses either on the trachea or the heart or on the vagus or phrenic nerves; the other that the condition is toxæmic.

To review the rival hypotheses: the thymus is of greatest size at two years of age, at which time it weighs a trifle over an ounce. At birth its weight is less by half. The weight is constant until the advent of puberty, when the gland atrophies. Under pathological conditions it may reach as much as 4 or 5 ounces. According to Schale it requires six or seven times this weight to compress the trachea, but as opposed to that statement there is the fact that Kœnig and Purrucker relieved the dyspnœa by operation on the thymus in young infants aged three weeks and three and a half months respectively.

Lange reports a trachea constricted from pressure. Baumann relates the case of a child of nine months who was admitted into hospital with all the signs of suffocation of some twelve hours' duration, and who subsequently died. Its thymus weighed 4½ ounces, and the condition was thought to have possibly originated by tracheal obstruction from the position of the organ which stretched across the trachea, but there was no anatomical evidence of pressure. But Paltauf points out that if the fatal event be due to tracheal pressure there should be post-mortem evidence of such a condition similar to that encountered in cases of enlarged thyroid. He also emphasises the fact that before the fatal occurrence these patients appear to be quite healthy, and that in adults the death could certainly not be ascribed to pressure. Hypoplasia of the arteries with consequent narrowing of their lumens and enlargement of the heart occurred in some of the cases; in others the heart was small. Autopsies in those who have suddenly succumbed to this condition do not favour the view of a sudden swelling of the thymus sufficient to exercise dangerous pressure on the trachea or on the pneumogastric or phrenic nerves. The possibility of dyspnœa being due to pressure on the phrenic or pneumogastric nerves yet requires to be proved.

On the other hand, those who hold that the condition is due to sudden toxæmia from acute poisoning emanating from the lymphatic system are supported in their views by the results obtained by experiments.

Thus Lochte found that hyperthymization of the blood first lowered the blood pressure from paralysis of the vaso-constrictor

nerves, and later directly stimulated the heart, and quickened the pulse. An overdose brought about death by asphyxia.

Further, according to Flexner, mydatoxins and cytotoxins introduced into the circulation bring about hyperplasia of the spleen and lymph glands indistinguishable from the condition found in the status lymphaticus.

The more plausible theory is perhaps on the whole in favour of lymphatic poisoning with a sudden access of the toxin in fatal cases. It is possible also that a hypersensitiveness of the heart is produced by the toxins, that is to say the heart is readily depressed by some unusual stimulus, such as a trifling febrile attack or some dyspeptic disturbance. This hypersensitiveness would explain also the ease with which death occurs during chloroform administration. We can state from experience that the cardiac muscle in a death under chloroform in such a case was quite healthy microscopically, so that no gross lesion is present.

We have noticed an enlarged thyroid where death occurred within twenty-four hours from the onset of symptoms of tuberculosis, a point in favour of the theory that only a very slight stimulus is sufficient to cause death. Musser and Ullom quote a case of status lymphaticus where there were microscopical changes in the heart, the death arising from broncho-pneumonia. Heart failure appeared quite early in the case, too early they think, for toxæmia from the staphylococcus infection from which the child suffered, and they attribute it to lymphatic toxæmia. Of course it is possible that when some depressing secondary cause is at work for longer than a few hours, such as would be the case during chloroform administration, the heart-muscle may more readily degenerate than in a normal child.

The condition known as status lymphaticus is of considerable importance, and now that widespread interest is being aroused in the condition, further facts should be forthcoming which will throw light upon the true nature of the disorder.

Excerpta Puerilia.

The provincial meeting of the Society for the Study of Disease in Children.—This annual meeting took place at Bristol on Saturday, June the 18th.

Cases and morbid specimens of great interest were shown in the out-patient department and in the wards of the Children's Hospital, St. Michael's Hill, by the physicians and surgeons : Dr. Bertram Rogers, Dr. Cecil Williams, Dr. Fortescue-Brickdale, and Dr. Theodore Fisher, Mr. C. A. Morton, Mr. H. W. Kendell, and Mr. H. Elwin Harris. After tea, which was served in the hospital, an adjournment was made to the medical library, where, with an attendance of some fifty members and visitors, the meeting proper was held under the presidency of Dr. Theodore Fisher. Dr. Fisher, in felicitous terms, welcomed the members of the Society to Bristol, and then passed on to the more formal proceedings. Cases and microscopical specimens were shown by, among others, Dr. J. Michell Clarke, Mr. J. Lacy Firth, Mr. Paul Bush, C.M.G., Mr. D. S. Gerrish, and Mr. R. G. Poole Lansdown.

Dinner, which was well attended, was served in the evening at the Clifton Down Hotel, Clifton, the chair being occupied by Dr. Frederick Taylor.

Dr. Taylor, in proposing the toast of the evening, "The Society for the Study of Disease in Children," alluded to the immediate success attained by it at its foundation in 1900, to its steadily increasing membership, and to the fact that it now boasted over three hundred members, with a reserve on the books waiting for election. Its volumes of Reports, of which three had been published, testified to the good work done by it in the past; the large attendance at its meetings to the interest displayed in the subject with which it dealt; and its waiting list to its steadily increasing popularity.

Mr. A. H. Tubby and Mr. Sydney Stephenson responded on behalf of the Society, the former foretelling that it would soon be found necessary to limit the number of its members.

"The Officers of the Society" was proposed by Dr. Leonard Guthrie, who drew a harrowing word picture of the physical and mental condition of the over-worked officials. The toast was responded to by the Honorary Secretaries, Dr. George Carpenter and Dr. G. A. Sutherland.

The Children's Hospital and the good work done by it did not escape attention, and Dr. Bertram Rogers responded to the toast.

"The Bristol Medical School" was proposed by Mr. R. Clement Lucas, and the toast was responded to by Mr. Paul Bush and Dr. Markham Skerrit, the latter in his reply alluding to the excellent work done by the 'British Journal of Children's Diseases.'

"The Bristol Royal Infirmary and the Bristol General Hospital" were proposed by Dr. Frederick Taylor, and the toast was responded to by Dr. Shingleton Smith and Mr. R. G. Poole Lansdown.

The toast of "The Visitors" was proposed by Dr. Theodore Fisher, who corrected a statement which had been made by a former speaker as to the 'British Journal of Children's Diseases' being the organ and property of the Society. It was pointed out that the JOURNAL was actively interested in the welfare of the Socicty, but that it was a separate venture, and controlled by its editor, Dr. George Carpenter. Dr. Michell Clarke and Mr. Munro-Smith responded for the visitors. The latter gave some interesting reminiscences of his experience in children's practice. On one occasion he called in a children's specialist with a successful result, and he was much impressed by his management of an unruly child. His account of the adoption of the specialist's successful methods in the case of a lady patient whom he mistook in the dimly lighted room for a golden-haired child, and what followed, afforded much amusement.

Dr. Fortescue-Brickdale proposed the health of the Chairman, who responded, and this brought a very successful gathering to a termination. Among the London members were Dr. James Taylor, Mr. Richard Lake, and Mr. George Pernet, and among the numerous visitors, Mr. Robert Evan Adlard, Dr. A. F. Blagg, Mr. W. M. Beaumont, Dr. Watson Williams, and Dr. Walter Swayne.

The care of pauper children.—At a meeting of the State Children's Association held recently, the President, the Earl of Crewe, drew special attention to the aims of the Association which have been pursued in the face of much opposition.

At present out of 61,000 children dependent on the State, 22,000 are in workhouses. Such an up-bringing as this is most prejudicial to their future chances in life. The Association is in favour of boarding out the children in small scattered houses in the country, a plan which has proved successful wherever tried, and which particularly guards against the dangers of overcrowding. This system not only produces the most efficient citizens, but in the long run is the most economical to the State.

State Socialism in New Zealand in regard to infant lives.—Mr. Seddon intends that the State shall, in future, take steps to protect the lives of infants in the Colony, and next session he will endeavour to pass laws with that object in view. Two years ago an attempt was made by Act of Parliament to minimise the decrease in the birth-rate by prohibiting the sale of certain restraints, and now Mr. Seddon intends to save the lives of as many infants as possible by establishing a huge nursery department. That part of Mr. Seddon's scheme which deals with the future welfare of the children can be summarised as follows :

1. The establishment of State hospitals for the treatment of children of poorly-housed working people, the management of the institution to be placed in the hands of trustees.

2. Adoption of the lines laid down in the United Kingdom for the prevention of cruelty to children.

3. The establishment of homes for the daily care of young children whose mothers have to go out to work.

4. Making it illegal to insure children of tender years for sums beyond that which would cover the cost of interment, viz., £5; and

5. Making it illegal for any parent or guardian to commute (capitalise) the weekly or monthly amount payable for the maintenance of a child.

Separate courts and places of detention for children.—The Metropolitan Asylums Board for the last two years have provided remand homes for children who otherwise would have been sent by the magistrates to workhouses. The Children's Committee of the Board now strongly advocate that children should be taken immediately on arrest to a remand home, and thus escape confinement in a police cell, where they would be subject to the evil influences of older criminals. They also expressed the opinion that some suitable provision might be made for hearing the cases of children apart from those of adults, thus separating them from the contamination of the police-courts. The Board has instructed its Children's Committee to draw up a specific scheme for submission to the Home Secretary. Three months prior to this, however, a deputation made urgent representations to the Lord Mayor of Dublin and received a sympathetic reply.

Juvenile courts have long passed the experimental stage. In South Australia one was created fourteen years ago, and it is now on a permanent basis. Its powers have been extended since its creation, and it deals with every offence, except homicide, committed by

persons under eighteen. Australia borrowed the plan from Massachusetts, where it is no less than forty years old, and New York, Chicago, Baltimore, and Denver have adopted it, as well as Continental countries, and there is but one opinion as to its value. Care has been taken in the United Kingdom that after conviction children shall not mix with adults, but there is nothing to prevent contact before the conviction.

Separate courts and places of detention for children are urgently required here, since children may now be brought up for many misdemeanours which are not criminal offences at all. Such modes of procedure would prevent the contamination of youthful offenders by association with criminals and the dissolute. A quiet mode of procedure would eliminate the unhealthy excitement incident to police-court proceedings and to the stages preceding them. Boys and girls contaminated by penny dreadfuls, and whose nervous systems are unhealthily stimulated by other pernicious literature, would find an absence of hero worship directed to them in such prosaic surroundings, and their impressionable companions would be deprived of the incentive to imitate their misdoings.

Meals before lessons.—The London County Council has approved the formation of a Joint Committee to carry on the work in connection with underfed children, and it is to be constituted of four representatives of the London County Council, four representatives of the Committee of Representative Managers, one representative of the London Schools Dinners Association, one of the Destitute Children's Dinner Society, and one of the 'Referee' Fund. The question of providing food for children attending the public elementary schools whenever it is thought desirable has been discussed by some of the borough councils, and Islington, as was announced under a similar heading in the June number of the JOURNAL, has come to the conclusion that local education authorities should be empowered to spend public money in this direction. On the other hand, the experience of the Joint Committee has justified the decision of the School Board that there was no necessity for imposing on the rates the burden of supplying meals. During the season 1903-4, 201 schools had meals on an organised system, and the average number of children fed weekly (that is, two or three times a week for twenty weeks) was 23,842, the number of meals provided weekly being 56,109.

Education of children from a practical standpoint.—The Comtesse de Briec recently read a paper at the Vrilya Club, the Modern

Gallery, Bond Street, on this subject. The main features of her address were that more attention should be given to the practical training and education of children; that the present system was in many respects not only faulty but detrimental in the extreme to the present and future welfare of the child. Greater care should be taken in the selection of a nurse, as the impressionable young mind is ever ready to take on good and bad influences. Diet, clothing, exercise of mind and body, and the importance of congenial surroundings also received adequate attention. The main idea of this paper was to draw the attention of intelligent men and women to the absolute necessity which now exists of bringing this subject more prominently before the public.

Abstracts from Current Literature.

Medicine.

Traumatic hysteria in children (*'Société de Pédiatrie,' January the 19th*, 1904; *'Le Progrès Médical,' p.* 167).—**Bosc** communicated a case of a boy of fifteen, who had fallen 10 ft. and sustained thereby a slight injury of the leg. He could walk soon after, but before long developed a deviation of the foot, which consisted of equinovarus. He limped a little, and was very tired after doing his work. There had been no previous nervous trouble, but now he presented pharyngeal and corneal anæsthesia, with anæsthesia of the thigh of the affected side; no diminution of the visual field; no hysterogenic zones. The contracture at once disappeared under chloroform; it was completely cured by immobilisation for ten days.

At the same Society, on February the 23rd, **Broca** showed a girl of twelve affected with marked dorso-lumbar scoliosis. She had had a fall, but ran about quite well for four days afterwards. Then she began to limp, and rapidly developed the scoliosis. There were no rickety lesions found, nor hip disease. No other signs of hysteria, although M. Broca considered that that was the most probable diagnosis. A rest of a fortnight had produced no amelioration. He quoted another case, of cervical contracture, which had supervened at once after an injury, in a child, who showed no other sign of hysteria. This was cured by twenty-four hours' continuous extension. A. Ernest Jones.

Fœtal achondroplasia (*'Société d'Obstétrique de Paris,' February the 18th*,1904).—**Bouchacourt** showed the radiographs of five cases. He included under this title several abnormalities of the skeleton, of intra-uterine production, characterised especially by smallness of the chief segments of the limbs, and by an increase of the size of the head. The most constant sign is the thickness of the bones of the vault of the skull. The long bones, although usually massive, are sometimes irregularly curved, and are remarkably permeable to the Röntgen rays. A. Ernest Jones.

Infantilism in Pott's disease (*'Société Médicale des Hopitaux,' March the 18th*, 1904, *'La Presse Médicale,' p.* 191).—**Pierre Marie** and **Andre Leri**

called attention to the frequency with which this condition, and particularly relatively long limbs with a relatively small head, was associated with Pott's disease. The genital organs were usually better developed than the rest of the body, although occasionally atrophy occurred there also. The condition was of Lorain's type, and was neither due to thyroid atrophy nor to genital atrophy, nor to any cachectic state. It could not be correlated in severity with any particular localisation of the lesion, but was most marked in cases who had developed the spine disease very early in life.

Apert considered that the condition was due to the tuberculous nature of the complaint, and recalled the fact that Lorain had described his cases in tubercular subjects.

A. Ernest Jones.

Emission of N rays from paralysed muscles (*'Société de Neurologie, March 3rd*, 1904). **Ballet** and **Delherm** give the result of their investigations in a series of cases of paralysis. They employ a screen five millimetres by three, which is placed at one extremity of a hollow lead tube five centimetres long, the other extremity of which is applied to the part under examination. They state that muscles paralysed by an infranuclear lesion (cases of lead wrist-drop, polyneuritis, facial paralysis, etc.) send out rays to a less extent than the healthy muscles of the opposite side. On the other hand, muscles paralysed from a supranuclear or upper neurone lesion (cases of old hemiplegias, spastic paraplegias, etc.), whether they are in a flaccid or a spastic condition, show an exaggeration of the usual phosphorescence as compared with the healthy muscles of the opposite side.

A. Ernest Jones.

Reflex atrophy of articular origin (*'Société Médicale de l'Elysée, March the 7th*, 1904; *Journal de Médecine de Paris*, 1904, *p.* 122).—**Denis-Courtrade** discusses the various theories invoked to account for the extensor atrophy so commonly seen in joint disease. Disuse from the fixing of the joint, periarticular inflammation leading to myositis or neuritis, interstitial œdema, and other causes have at various times been thought to explain the phenomenon. Experiments done at Francois Frank's laboratory recently have given the reflex theory a high degree of probability. This theory, originally propounded by Brown-Séquard and Vulpian, claimed that the peripheral irritation caused a lesion in the trophic centres of the cord. If one cuts the posterior roots of a dog on one side, and then causes an articular traumatism on two sides, atrophy supervenes only on the side of the intact roots. Post mortem, however, no organic lesions are found either in the anterior horns or the nerves, which seems to indicate that the process is only a slight one disturbing the function of the cells. The extensor muscles always wasted much more. This may be explained by some experiments of Babinski and Onanoff, which showed a close correlation between rapidity of development of muscles and readiness in succumbing to injury; as a rule the extensors develop more rapidly than the flexors. The author explains the non-correlation between the degree of atrophy and severity of injury by the interposition of another factor—the health of the nervous system. A slight joint lesion will cause great atrophy in a neurasthenic.

There is no qualitative change electrically, and the reaction of degeneration is always absent. When this reaction occurs one should think either of a traumatic neuritis, *e. g.* paralysis of the deltoid from injury to the circumflex nerve, or of a cord lesion causing both the atrophy and joint trouble.

A. Ernest Jones.

The indications for lumbar puncture (Rachidocentesis) (*'La Pedriat.,'* 1903).—**G. Silva** bases his remarks on a year's experience at the Clin. Ped. of Padua. He prefers the sitting posture for the operation. Fatal accidents re rare and occur mainly in cases of cerebral tumour. Minor disturbances, such as vertigo, vomiting, headache, syncope, etc., observed by some authors after extraction of the cerebro-spinal fluid, may be avoided by withdrawing not too great a quantity and slowly, through a fine canula, never with aspiration. The diagnostic utility is indisputable; by the direct examination of the fibrin which forms in the liquid in cases of tuberculous meningitis, Koch's bacillus is found in the majority of cases. Rachidocentesis has a palliative effect in many cases. With regard to its therapeutic effect the author asserts that every time the increase of liquid becomes apparent, with definite symptoms, it is necessary to practise lumbar puncture. In the treatment of chronic hydrocephalus it was always successful and not rarely led to cure. The best results were obtained in hydrocephalics, in whom after every lumbar puncture a depression of the anterior fontanelle was observed to persist for four to ten hours. VINCENT DICKENSON.

Fœtal heart-murmurs (*'Amer. Journ. of Obstetrics, etc.,' January,* 1904, *p.* 36).—**H. G. Wetherill** examined a woman at about the eighth month of pregnancy and heard a fœtal heart-murmur. The murmur was systolic in time, loudest two inches below and to the right of the umbilicus, and audible over an area about three inches in diameter. The child was born one week later, somewhat cyanosed, with a harsh systolic murmur over the cardiac area, and weighed five and a half pounds. On the twelfth day of life the murmur was unaltered. It was ascribed to pulmonary stenosis. The child was strong and vigorous. Other cases have been recorded. **Hochsinger** (*'Die Auscultation des kindlichen Herzens'*) quotes two cases—those of Barth and of Hennig. In the former a rough systolic murmur was heard to the left of and below the navel. The child was still-born and presented endocarditis of the tricuspid valve. In Hennig's case a double murmur was heard before artificial delivery in the eighth month of pregnancy, and in the cyanosed infant after birth. It proved to be due to endocarditis of the aortic valves. **Christopher** reported a case to the American Pediatric Society. A murmur was heard in the left iliac fossa at the time of labour, although normal fœtal heart sounds had been heard a month previously. This is curious, in view of the gross anatomical lesions found post-mortem. The infant presented some cyanosis on the second day and died on the fourth. A systolic murmur was heard all over the cardiac area and conducted into the neck. The foramen ovale was patent. The aortic and tricuspid valves showed verrucose thickening. The pulmonary artery took its origin from the aorta just above the sinus of Valsalva. **Hall** (*'Archives of Pediatrics,'* 1897, p. 905) reported a case in which a rough, blurred, first sound was heard two inches below and to the right of the navel. After birth a systolic murmur was heard, loudest over the junction of the third costal cartilage with the sternum. The pulmonary second sound was accentuated. The murmur gradually faded, and on the tenth day the heart-sounds were normal. He ascribed it to a patent ductus arteriosus which finally became obliterated. EDMUND CAUTLEY.

Case of myositis ossificans (*'Société de Pédiatrie,' February the 23rd,* 1904; *'Le Progrès Médical,' p.* 167).—**Lornby** showed a girl aged 8, in an advanced state of this rare disease. The case had been described at the age

of 15 months, by Ménard, to whom it had been taken with the diagnosis of Pott's disease. Now, the ossific nodules were very widely distributed in the muscles and tendons, both of the trunk and extremities. Skiagraphs were shown of the case. A. Ernest Jones.

Acute serous pleurisy at three months old (*'Journal de Médecine de Paris,' February the 14th*, 1904, *p.* 71).—**Louis Regis** saw a child three and a half months old, which had recently been weaned. It was breathing rapidly, and was very cyanosed. There were signs of an extensive pleural effusion on the left side. The fluid removed was clear; it was not examined bacteriologically.

The writer gives a *resumé* of the literature of pleurisy in infants, and says that this is by far the youngest case recorded. A. Ernest Jones.

The value of tannin preparations in the intestinal lesions of infancy (*'Deut. Aerzte Ztg.,'* 1904, *H.* 5, 6, *and* 7).—**M. K. Preiss** publishes the results of a series of 150 observations upon the action of certain modern preparations of tannin. The preparations employed were tannigen, tannoform, and tannalbin. They were used in cases of intestinal dyspepsia, acute and chronic enteritis, cholera infantum, and tuberculous and septic diarrhœa. The writer found that tannalbin yields good results in intestinal dyspepsia, acute and chronic catarrhal inflammation of the small intestine, and in tuberculous diarrhœa. The administration of tannigen was invariably attended by negative results. Tannoform afforded relief in a few cases of acute and chronic inflammation of the small intestine, in catarrhal conditions of the large intestine, cholera infantum, and tuberculous diarrhœa. The improvement effected was, however, transient, and only noted in infants of over two to three months of age. No preparation in any way influenced the course of the septic diarrhœas. E. P. Baumann.

Treatment of infantile diarrhœa by gelatin (*'Journal de Médecine de Paris,' January the 17th*, 1904, *p.* 22).—**Weil,** of Lyons, strongly advocates the use of sterilised gelatin. He gives six to twelve grammes a day. It is of value in all cases of infantile enteritis, but not in cholera nostras. Its influence on cases with green, offensive stools is very marked.
A. Ernest Jones.

Influence of chloride of sodium on the weight of new-born children (*'Société de Pédiatrie,' December the 15th*, 1903; *'Le Progrès Médical*, 1904, *p.* 9).—**Nobecourt** and **Vitry** give an account of the use of this substance in eight breast-fed children. Seven of these gained weight whenever they were put on the drug, but not if the dose exceeded one gramme per diem. The authors advocate its addition to the usual diet of infants.
A. Ernest Jones.

The action of rennet upon the digestion of milk (*'Monatsschr. f. Kinderheilk.,' February*, 1904, *p.* 595).—**G. Riotondi** discusses the meaning of the favourable results obtained in the feeding of infants by the addition of rennet to milk. It is well known that the formation of large clots is thereby prevented, but the writer does not believe that this fully explains the results. It is probable that it serves wider and more general purposes than merely to influence the process of coagulation. The digestive action of the ferment upon the caseinogen of milk, which it transforms into casein,

is susceptible to two explanations. 1. It may act by modifying the casein in some way and rendering it more easily digestible. 2. It may exert an actual proteolytic action, splitting the caseinogen into two proteid bodies of which one is soluble and easily absorbed from the stomach. The latter view, which was originally propounded by Hammersten and strongly supported by Haliburton, is confirmed by investigations undertaken by the writer. He finds as the results of his experiments that during the coagulation of milk by means of rennet a new proteid body, which remains dissolved in the milk serum, is formed as the result of splitting of the caseinogen. The amount of nitrogen contained in this new proteid body corresponds to about one-tenth of the total nitrogen of the milk. The body so formed must be classed between the native proteins and primary albumoses.

E. P. Baumann.

Sudden death by suffocation due to an ascaris (*'Journal de Médecine de Paris,'* 1904, *p.* 35).—**Valerien-Georges Negresco,** of Bucharest, reports a case of the above. The patient, a boy of three, had complained of pain in the abdomen, and had had several convulsions in the past month. He suddenly choked, and was thought to be in a fit. Post mortem a dead ascaris lumbricoides was found in the trachea. There are several instances already on record.

A. Ernest Jones.

Atrophy of one kidney (*'Prag. med. Wochenschr.,' April,* 1904, *No.* 15, *p.* 183).—**A. Rohn** describes the case of a female infant, aged 3 months, who died of marasmus secondary to chronic gastro-enteritis. At the necropsy, the right kidney was seen to be remarkably small. On section the surface presented a pale yellow appearance, only small areas of normal parenchyma being evident. The right ureter was patent, although somewhat narrowed. The right renal vein was completely occluded by an old thrombus. The thrombus was continued into the inferior vena cava, and extended for a short distance in both directions along the course of that vein; the lumen, however, was not completely occluded. The renal arteries on both sides, as well as the left renal vein, were not thrombosed. On histological examination the discoloured portions of the kidney were seen to consist of areas of necrosed and shrunken tissue. The veins were completely filled with an organised thrombus. The arteries were healthy. At the borders of the diseased and relatively normal renal tissue there was a well-marked inflammatory infiltration with early interstitial connective-tissue formation. The left kidney presented no morbid appearances. In the inferior vena cava the thrombus was beginning to organise, a narrow channel being present at one side. The author considers the case to be one of hæmorrhagic infarction of the kidney, with subsequent necrosis and inflammatory reaction, following upon thrombosis of the renal vein. The occurrences of such thrombotic changes in the veins is not unknown in children suffering from severe gastro-intestinal disturbances, but the thrombosis is generally much more recent than was here the case. Had the child lived, the kidney would probably have become organised, and in due course shrunken into a fibrous nodule. This state of affairs is occasionally found at necropsies upon adult bodies, and the facts of the case above related should be borne in mind in endeavouring to explain the causation of the condition.

E. P. Baumann.

Weight variations in scarlet fever (*'La Presse Médicale,' March the*

23*rd*, 1904, *p.* 185).—**Garnier** and **Sabareann** have made a series of investigations on this point by weighing patients on alternate days and constructing charts. The conclusions they reach are: For the first two days the weight is stationary or increases a little; at the fall of the temperature the weight falls several kilogrammes very rapidly; then, so long as the patient remains on a strict milk diet, the weight is stationary or falls a little; after increasing the diet a considerable increase in weight occurs, and in a few days the patient may have passed his original weight; after the third week no further increases take place. A. Ernest Jones.

Discussion on infantile scurvy and its cause (' *La Clinique Infantile*,' *January* 1, 1904, *p.* 13).—Seven cases of scurvy were shown at the Societé Médicale des Hôpitaux. Two had been fed on milk pulverised at a high temperature, two on humanised milk, one on Allenbury's food, one on oxygenised milk, and one on milk sterilised at a high temperature. The six first-mentioned presented the ordinary features of scurvy, and rapidly ceded to treatment, *i. e.* fresh milk with orange or lemon juice. The interest of the meeting centred on the seventh case, shown by **Aviragnet**, and which had the following history: The child was fed, from six weeks, with sterilised milk (Gallia Co.) exclusively. All went well up to nine months, when it contracted influenza and a sharp attack of bronchitis, attended with pallor, pain, and pseudo-paralysis of the right leg. The gums were swollen and bled; there was a large hæmatoma on the right thigh, and one on the right chest. Hæmaturia was present, and the temperature rose to 104° F. This latter fact was explained by a patch of broncho-pneumonia at the left apex. Most of the symptoms subsided, but the hæmatomata went on to suppuration, and were incised. The femur became the seat of osteo-myelitis. In the discussion which followed it was agreed that scurvy might be accounted for by the use of (1) milk humanised by Gärtner's method, (2) milk sterilised by oxygen, (3) milk pulverised at a high temperature and pressure, and (4) various proprietary foods. Aviragnet expressed the opinion that milks deprived of their anti-scorbutic properties, of which the pulverised milk was the most satisfactory example, should not be given for long without adding some corrective to the food. However, both he and Variot concurred in thinking that milk, sterilised at 108° C., and which had been subjected to no previous manipulations, was quite free from danger. Variot doubted whether the case quoted, which had been fed on pure milk sterilised at 108° C., was really a case of scurvy. He himself regarded it as a case of osteo-myelitis, following on broncho-pneumonia. He pointed out that it possessed some atypical features. Barlow himself had never described a case terminating in osteo-myelitis. The one-sided paralysis and high temperature were not characteristic of scurvy, and hæmaturia was of most exceptional occurrence. The diagnosis was important, since the reputation of the milk in question depended on it. A. T. Barnard.

Abductor reflex of the foot (' *Société de Neurologie*,' *January* 7, 1904; '*Archives de Neurologie*,' *p.* 170).—**Hirschberg** and **Rose** described a reflex, consisting of adduction and internal rotation of the foot, provoked by excitation of the inner border of the foot, especially at the level of the big toe. The reflex is only present in lesions of the crossed pyramidal tract, and is nearly as constant as Babinski's extensor response. In many cases it is present when this response is either absent or badly marked, and then is of great diagnostic value. A. Ernest Jones.

On the common causes and effects of the return of the mother's milk to the colostral state during lactation (' *Riv. di Clin. Pedriat.*,' *February*, 1904).—**Spolverini** comes to the following conclusions: The most common causes which induce the return of the milk to the colostral state, which are referable to the mother are:—

a. Internal { Mental { Violent and unexpected emotions, prolonged agitation and annoyance. / Physiopathological { Menstruation, pregnancy, disease of the mother.

b. External.—Irregular or suspended lactation, disease of infant.

Neither the age of the woman, social condition, nor period after parturition have any appreciable influence in its production. The intestinal disturbances in the child must be considered as the effects of the abnormal condition of the milk in having re-acquired the colostral characteristics. In some cases, however, there may be concurrent factors. Such disturbances are of short duration and from a practical point of view do not require, except in rare instances, even a temporary interruption of lactation. Further researches are necessary to explain the cause of unsuccessful lactation without cause appreciable to ordinary methods. VINCENT DICKINSON.

Therepeutic indications of paraglandin (' *Suppl. Policlinico*,' 1903).—**Aporti** experimented with this substance in the medical clinic of Parma, and concludes that out of the many substances extracted from the supra-renal capsules only that secreted by the medullary part contains the vaso-constrictor principle. Paraglandin thus extracted from the supra-renal gland of the ox is a white liquid, tending to yellowish, of sweetish taste, and besides maintaining the cardio-vascular tone and acting directly on unstriped muscle producing contraction and increased tonus, also acts through the diastasic ferments and through lecithinic phosphorus on organic metabolism in the shape of a ferment which regulates biochemical processes and prevents auto-intoxication. In Addison's disease it only produced a respite in the fatal course of the illness. In a case of cyclic albuminuria the result was negative. In a case of ophthalmic hemicrania of vaso-paralytic origin thirty to forty drops taken at the onset of the attack were sufficient to abort it. In a case of gastroectasis and gastrorrhœa, paraglandin was capable of producing in a few days diminution of the gastric area and disappearance of the gastrorrhœa. In various cases of constipation it produced a surprising effect where the cause lay in intestinal atrophy, but in cases of excessive contractility of the muscular fibres the condition of the intestine was made worse.

Cattaneo (' *Communicazion alle Assoc. Med. Chir. di Parma*,' *November*, 1903) also made experiments with the same substance on five children affected with gastro-intestinal atrophy, two were also rachitic. The maximum dose was forty drops four or five times; no untoward symptoms were noticed. In four there was an increase of 100 to 300 grains in ten to twelve days. In all five the atrophy and rickets were notably benefited.

VINCENT DICKINSON.

A case showing Giese's syndrome (' *Obozrenié Psichiatrii*,' VI, 1901; ' *Centralblatt f. Nervenheilkund.*,' *N. F.*, XII, 1901).—**W. M. Bechterew** relates the case of a girl of nineteen, who since infancy had slowly developed the following symptoms:—Cerebellar ataxy, difficulty of speech, tremor of the limbs, rigidity, and mental debility. There was no affection of sensation.

Friedreich's disease was excluded, as there was no muscular ataxy, no choreic phenomena, no nystagmus, and the knee-jerks were preserved.

The case differed from those which Giese described as showing a "New Form of Hereditary Nervous Disease" (*'Deutsch. Zeitschr. f. Nervenkrank.,'* XVII, 1900), in having no exaggeration of the deep reflexes and no local paralyses, although the peripheral portions of the limbs were clearly backward in development. The mental debility and tremor of the limbs, accompanied by a gait resembling that seen in cerebellar ataxy, made one think of a cortical affection of the brain probably associated with a degeneration of the pyramidal tract and descending cerebellar tracts.

A. Ernest Jones.

Surgery.

Congenital hypertrophic stenosis of the pylorus (*'Brit. Med. Journ.,'* 1904, I, 1073).—**A. J. Cleveland,** of Norwich, reports a case in a male baby who died at the age of three months. The symptoms began on the fourteenth day of life and consisted of characteristic vomiting, constipation, dilatation of the stomach, and wasting. The child came under observation at the age of two months. A week later well-marked peristalsis and a succussion splash were noted. The pylorus was not palpable. Death took place in another three weeks. Convulsions, probably of the nature of tetany, were present during the latter weeks. On post-mortem examination the pylorus presented the condition typical of this affection, except for a constriction in the middle of its length. The intestines were almost empty, and there was scarcely any fat anywhere. I have little doubt this child might have been saved by operative measures if the parents would have consented. He died at about the usual age from simple starvation. Tetany is not uncommon in the later stages. It may recur after treatment by pyloroplasty if it has been present before operation. In cases treated by lavage it also may occur.

Edmund Cautley.

Dyspnœa from plugging of the glottis by the uvula (*'The Australasian Medical Gazette,' vol.* XXIII, *No.* 3, *p.* 116).—**Fred. J. T. Sawkins** records an unusual cause of laryngeal obstruction. A child, twenty months of age, was seen suffering from dyspnœa caused by laryngeal obstruction. The tonsils were large and the fauces were congested. Inhalations of steam relieved the urgent symptoms, though there was still difficulty of breathing. Some days later the child was again brought for advice, was admitted into hospital and trachetomy was performed on the same day. A tube was worn for two months, and it was found to be impossible to dispense with it. Repeated examinations of the larynx under an anæsthetic were attended by negative results. On the last occasion a glimpse of a rounded body slipping into the interval between the epiglottis and larynx was obtained, and on lateral inspection by the laryngeal mirror this was seen to be the tip of the uvula. The uvula was amputated, within forty-eight hours the tracheotomy tube was removed, and the child subsequently breathed without any difficulty.

Theodore Fisher (Bristol).

Contribution to the study of infantile cystitis due to B. Coli (*'Riv. di Clin. Ped.,' April,* 1904).—**C. Combe** says this affection is far from rare, especially in very young infants, and produces in severe cases a condition of continued fever, remittent or intermittent in type, anorexia, thirst, sometimes vomiting, notable facial pallor, somnolence and apathy which alternate with

periods of restlessness and excitement. The urine is always very acid, and has often a fœcal odour. The duration varies for weeks, and even for months. Infection may take place through the blood, intestines, or urethra. A case is described of an infant of twenty months; history of gout in maternal aunt and grandmother; father obese. The child was pallid and excitable, and on January 6, 1903, became more restless, temperature rising to 39° C. Urine turbid, very acid, traces of albumen, crystals of uric acid in sediment with polynuclear leucocytes, vesical cells, some red blood corpuscles, and B. coli. Milk diet with alkaline water of uliveto, infusion of uva ursi 5 per cent., with salol, benzoate of sodium and urotropin failed to influence the malady. The fever continued with morning remissions. The child cried when micturating, and for this warm baths were ordered. From January 17 to 19, high fever continued, the tongue and lips dry, pulse small and frequent, condition grave. An injection was made on January 19 of Celli-Valenti anticoccal serum 10 c.cm., and repeated the following evening. On 21st the condition was much better; child slept after food. Temperature went down to 37·7° C. Urine showed agglutinated masses of B. coli. A vesical injection of 1 per cent. protargol was given daily. After an attack of urticaria and a subsequent relapse of the cystitis, cure resulted on February 17, but health was not completely established for some months. Seeing the marked improvement after the injection of the Celli-Valenti serum, and the agglutination of B. coli observed in the urine the day following the injection, and also the agglutination of the same B. in broth cultures to which the serum was added, the author believes himself justified in describing this case as one of cystitis caused by the dysenteric variety of B. coli. VINCENT DICKENSON.

Hermaphroditism (*'Journal d'Accouchements,' January the 31st*, 1904; *'Journal de Médecine de Paris,'* 1904, *p.* 81).—**H. Lambinon** gives an interesting *resumé* of this subject, chiefly from the historical point of view. His article is *à propos* of one by Neugebauer, who saw six cases in 1903.
A. ERNEST JONES.

Tuberculous arthritis in the young (*'Medical Press and Circular,' May* 25, 1904).—**Robert Jones** advises that in bad cases of hip disease where there is marked flexion, adduction and shortening, the deformity should be reduced under an anæsthetic, tenotomy being performed in addition if it is found necessary, and the limb fixed in a Thomas's splint. He says that he has never seen general tuberculous infection occur as the result of this treatment. He believes that it is a bad thing to open all abscesses at once, and does not do so unless the skin is involved or some other reason renders it imperative. When an abscess is causing symptoms, however, he opens it at once. In those cases where, as the result of old hip disease, bony ankylosis has occurred on both sides, he advises that osteotomy should be performed upon the worst side only, and a piece of metal foil placed between the ends of the bones in order to prevent bony ankylosis from taking place after the correction of the deformity. Particular attention is drawn to the importance of fixing the leg in a slightly abducted position in those cases where bony ankylosis is aimed at. In the treatment of tuberculous disease of the wrist-joint exception is taken to the common practice of treating these cases with a flat anterior splint, as after its use ankylosis occurs in a position of slight flexion, and in this position the grasp of the hand is weak, whereas if the hand be fixed in a slightly hyperextended position the resulting grasp is good. P. LOCKHART MUMMERY.

Congenital occlusion of the œsophagus (*'Birmingham Medical Review,' February*, 1904).—**William Thomas.** In a very interesting article upon this rare condition mention is made of nineteen recorded cases. That the condition is not so rare as might be supposed is shown by the fact that seven cases occurred in sixteen years in the Copenhagen Lying-in Hospital, where between 1100 and 1200 parturient women are yearly treated. Mr. Thomas points out that there are two varieties of this condition:—(1) Those in which the upper and lower portions of the trachea are united by a fibrous cord; (2) those in which the lower part of the œsophagus opens into the trachea or one of the bronchi. The latter seems to be by far the more common of the two conditions. Abnormalities of the rectal end of the alimentary tract are not infrequently found to be associated with this condition. In all the cases the upper part of the œsophagus was found expanded into a large sac formed of its normal membranes and terminating in a rounded extremity with smooth walls. The condition is usually first noticed on the second day of life, and most of the cases prove fatal within a few days. The only form of treatment that seems to afford any chance of success is an immediate gastrostomy. Mr. Thomas mentions one case in which a child lived for fourteen days after being operated upon for this condition, but this appears to be the only recorded case where an operation has been performed. He points out that the earlier recognition of the condition and prompt treatment might lead to greater success being attained.

P. Lockhart Mummery.

Four cases of operation for strangulated inguinal hernia in infants (*'Lancet,' May* 28, 1904).—**R. C. Dun** reports four such cases. The first was a male child seventeen days old; symptoms of strangulation had been present for three days, and attempts to reduce the hernia by taxis were unavailing. At the operation a coil of small intestine was found to be strangulated, and as the surface was still smooth and glistening it was returned into the abdomen and a radical cure performed. The child died thirty-six hours later. At the necropsy no peritonitis was found, but a band formed by a Meckel's diverticulum was present two feet from the ileo-cæcal valve. The band was two inches long and was partially constricting the intestine. There was also ulceration of the intestine at the site of strangulation. The second case was a male infant five weeks old. Symptoms of strangulation had been present for twelve hours before operation. A coil of small intestine was found to be strangulated; this was returned and a radical cure carried out. There were no bad symptoms and the patient made a good recovery. The third case was a male infant four months old. Strangulation occurred while the child was wearing a truss, and as the hernia proved irreducible an operation was performed eighteen hours after the onset of symptoms. The child got over the operation, but died from exhaustion following acute diarrhœa on the nineteenth day. The fourth case was a male infant twelve months old. Symptoms of strangulation had been present for ten hours. The child made an uninterrupted recovery. The writer points out the comparative rarity of strangulated hernia in infants, and lays stress upon the great importance of early operation in such cases when taxis has failed.

P. Lockhart Mummery.

Septic ear infections in nurslings (*'La Clinique Infantile,' January* 16, 1904, *p.* 51).—**Barbillon** remarks on the extreme frequency of septic

ear infection in nurslings. For two years he has examined the tympanic cavity in all autopsies in infants. He concludes: (1) Overcrowding in hospitals is an important factor in the causation of septic infection of this cavity. (2) The infection spreads from the naso-pharynx. (3) Its occurrence is extremely frequent and happens soon after admission into hospital. Suppuration of the middle ear was found after death in the large majority of the cases which had been resident in the hospital for some little time, even if no symptom of the condition had been present during life. (4) Many affections thought to be due to intestinal infection and treated as such are really due to infection of the nose and ear. In addition, dyspepsia and other gastro-intestinal disorders may be due to this infection. In the cases showing suppuration of the middle ear the tympanic membrane was most often intact. Twenty-five per cent. of the cases were bilateral. The diagnosis of ear infection is difficult in the absence of perforation. It should be suggested by anorexia, absence of thirst, profound apathy, and non-response to such therapeutic measures as generally prove efficacious when the digestive tract is at fault. A. T. Barnard.

Treatment of nævi by radium (*'La Clinique Infantile,' January* 15, 1904, *p.* 59).—**Holzknecht** has experimentally treated with radium, with encouraging results, a "port-wine stain" covering nearly the entire surface of the upper limb. The metal was made to act on eight separate circular areas, each ½ cm. in diameter; each exposure lasted ten minutes. The effect was the appearance of eight little circles of normal colour on the background of the telangiectasis. If this result is permanent, then the treatment of nævi by radium may be regarded as superior to all other methods. The author considers that the stain disappears owing to a degeneration of the cells of the vessel walls, especially of the intima, whereby the dilated capillaries become obliterated. In explaining the action of radium in other pathological processes, it must be remembered that Pfeiffer and Friedberger have experimentally shown that emanations from this metal arrest the development of certain pathogenic microbes (typhoid, cholera). Holzknecht has also had encouraging results in the treatment of psoriasis and lupus with radium. A. T. Barnard.

Foreign body impacted in the pharynx of an idiot (*'La Clinique Infantile,' February* 15, 1904, *p,* 102).—**Sebillian,** in the autopsy on an idiot girl, aged 10, found a bony substance 2 by 1½ cm. fixed in the right lower extremity of the pharynx between the posterior wall of the larynx and the prevertebral muscles. This foreign body had given rise to a local gangrenous condition of the adjacent muscles and to lung troubles, which ultimately proved fatal. The larynx was uninjured, but it was displaced. Ten days previous to entering the hospital the parents had noticed that the child had difficulty in breathing and could not eat. She had been subject to fits all her life, could talk little, and had not been able to learn to read. She was brought to the Hôpital des Enfants Malades in a semi-comatose condition, from which she partially recovered at times to ask for water, which she could only swallow with difficulty. She was very restless. Temperature 104° F.; pulse 128. She had occasional attacks of asphyxia lasting three to four minutes. There was some retraction of the substernal area. Behind there was some dulness and tubular breathing at the left lower lobe. The child died thirty-six hours after entering the hospital, asphyxia being the immediate cause of death. In this case diagnosis would have been possible

had a skiagram been made. A foreign body in the œsophagus had been suggested, but taking the skiagram was deferred on account of the extreme restlessness of the patient. A. T. Barnard.

The moment for operative intervention in croup (*'La Clinique Infantile,' March* 1, 1904, *p.* 157).—**Marfan** draws attention to this subject and asks: "When should we interfere?" He would operate in all cases of asphyxia, however slight the chance of saving the patient may appear. Relatives should be warned that success is very doubtful, but still many cases, apparently moribund, have been saved by tracheotomy and intubation. Still, if the medical attendant has any option, it is not right to delay matters to the point of extreme asphyxia, when the chances of success are certainly least. He next inquires as to the best moment for operation? Bouchut counselled awaiting the advent of asphyxia, which is marked by the appearance of cutaneous anæsthesia. To this the writer raises two objections: (1) the child's resisting power is reduced by the dyspnœa and cyanosis; (2) the after-danger of emphysema, leading to broncho-pneumonia, is greater the more the child has battled for air. The most favourable time for operating is when there is evidence that the air passages must become blocked if nothing be done. Marfan judges that this stage is reached when the inspiratory effort has been extreme and without respite for the space of about an hour. This rule must be modified, to some extent, according to different temperaments and the amount of distress present. Also it is justifiable to temporise, in spite of great dyspnœa, if the patient has had an injection of anti-toxin thirty hours or more before, provided the pulse remains good, since the serum takes thirty-six to forty-eight hours to act. Meantime relief may be given by damp cloths about the neck and thorax; the patient should be carefully watched, and the surgeon be prepared for instantaneous operation. After six years of age immediate measures are not so necessary, since the glottis is relatively larger, and the danger consequently less. Cadet de Gassincourt's sign for denoting on-coming asphyxia is the cessation, on auscultation, of the vesicular murmur. Bayeux operates when he finds the sterno-mastoid contracting actively. These signs, however, are only of value when permanent, and will be found to correspond in time to Marfan's before-mentioned sign of permanent inspiratory distress. There are two contingencies which call for immediate tubage or tracheotomy, *i.e.* (1) when there are prolonged attacks of suffocation in a young patient with feeble and irregular pulse, and in whom the serum has not been injected thirty hours. The danger here is not that the patient may die in such an attack, but that he may suddenly pass into the stage of asphyxia without a previous stage of dyspnœa; (2) one may have to interfere in patients who have been treated with serum forty-eight hours or more previously for the reason that the membrane is being detached *en masse* (instead of liquefying or crumbling as is usual) and blocks the larynx, suspended from a single point of attachment. Here immediate relief may be given by introducing the tube. A. T. Barnard.

Intussusception in infants (*'Congrés National d'Obstétrique de Gynécologie et de Pédiatrie,' April* 7, 1904; *'La Presse Médicale,' p.* 237, 1904).—**Grisel** read a paper on this subject, inquiring especially into the questions of ætiology and treatment. The affection is much rarer in France than in England. Of 300 cases 68 per cent. were under one year old, the fourth to the seventh month being by far the commonest age. The age influences the site, thus:—In infants under one year old the ileo-cæcal variety occurs in

82 per cent. of the cases; in children over this age in only 37 per cent. The enteric variety, on the other hand, increases in frequency with age, occurring in only 5 per cent. of the cases in the the first year, and in 30 per cent. of cases over this age. The writer lays stress on chronic appendicitis and the presence of Meckel's diverticulum as important factors in children, and an enterocolitis, consequent on errors of diet, in infants. Chronic intussusception never occurs in infants, and is rare in children. It is preceded in over half the cases by chronic appendicitis. Immediate laparotomy was the only treatment considered justifiable in either condition.

Arnoux mentioned a case due to a mass of ascarides.

A. Ernest Jones.

Reviews of Books.

Les Lésions Experimentales du Système Nerveux Sympathique Influent-elles sur la Pénétration de la Toxine Diphterique et sur la Resistance Organique? Dr. E. David, Professeur à l'Ecole de Médecine et de Pharmacie de Limoges. Mémoire Couronné par l'Académie de Médecine. Prix Pourat, 1903.

In this paper the author endeavours to prove that lesions of the sympathetic system favour the absorption of diphtheritic toxin, and also that the same lesions diminish the resisting power of the organism to infection by reducing the production of antitoxin. His method consists in excising the cervical sympathetic on each side in a series of animals, and subsequently injecting the toxin into the region where vaso-motor paralysis is produced. At the same time a series of healthy animals are injected with similar doses of the same toxin.

The results of these two series of experiments are compared with regard to the time of onset of the symptoms of intoxication, the time of death of the animal, the intensity of the lesions produced in the body by the toxin, and the state of the blood.

The first group includes 36 experiments, in 18 of which the animals had been sympathectomised, the remaining 18 being healthy animals. The figures representing the results of these experiments have been added up, and the grand total appears as follows:

Non-Sympathectomised Animals.

No.	Total W'ts.	Hour of appearance of symptoms.	Hour of death.
18	23,019 grms.	374 hr. 32 min.	499 hr. 20 min.

Sympathectomised Animals.

18	23,222 grms.	372 hr.	494 hr. 45 min.

It is argued that, as the total number of sympathectomised animals lived about $4\frac{1}{2}$ hours less than the total number of non-sympathectomised animals, and as their symptoms appeared about $2\frac{1}{2}$ hours earlier, the animals operated upon had less resistance than the normal ones, and that the incubation and duration of the infection were less in the former than in the latter. The next point brought out by the author is that the lesions in the organs of the sympathectomised animals are less intense than those in the normal animals.

This may be accounted for by the remark that the former died rather earlier than the latter, and therefore the toxin had not so long in which to act. Finally it is pointed out that there is a fall in the number of red blood-corpuscles and an increase in the number of white corpuscles in the healthy animals subsequent to the injection of the toxin, but that there is a *greater* fall in the red and a much *less* rise in the white corpuscles in the sympathectomised animals. In the former case the polymorphonuclear cells, and in the latter the lymphocytes preponderate. The average difference in the diminution of red corpuscles in the sympathectomised and healthy animals is about 1300 per cm., and in the rise of the white cells about 382 per cm.

The conclusion formed is that the smaller degree of leucocytosis in the sympathectomised animals leads to a diminished production of antitoxin and, therefore, a more rapid onset of death in these animals. This conclusion is, of course, based on the assumption that Metchnikoff's theory of immunity is correct.

On analysing the cases it is seen that it was by no means a uniform occurrence for the sympathectomised animals to die at an earlier period than the normal animals, and moreover that there was a considerable difference of time between the deaths of the normal rabbits. For example in experiment 4, rabbit 2, weighing 1300 grms., died in 15 hours 30 minutes, whereas rabbit 4, weighing 1300 grms., died in 18 hours, each having received 1 c.c. of the same filtered broth culture of diphtheria bacillus.

On the average a sympathectomised animal died about fifteen minutes before a healthy one.

In reality, therefore, there appears to be no practical difference whatever between the times of deaths of the sympathectomised and normal rabbits. All animals of the same species do not react in exactly the same degree to a given toxin, and in the case of diphtheria one can guarantee the death of an animal on some particular day, but at what exact hour or minute it will die it is impossible to foretell.

It is therefore evident that the differences between the times of death in the above experiments are not sufficiently great for any useful conclusions whatever to be drawn from them,

With regard to the post-mortem lesions it is rather difficult to understand how it is possible to detect a difference in the organs of two animals, one of which has died fifteen minutes before the other, each having been ill from twelve to fifty hours.

Since the remaining conclusions depend for their existence upon whether the sympathectomised animals did or did not die before the normal animals, it is easily seen that this paper is open to a considerable amount of adverse criticism. CHAS. BOLTON.

AIDS TO SURGERY. By JOSEPH CUMMING, M.B., B.S., F.R.C.S. London: Ballière, Tindall, and Cox, 1904.

THE author of this small volume disarms the reviewer of the obvious criticism on all such publications by stating in the preface his conviction that surgery can only be learnt in the wards. The clinical subjects are least of all suitable for the method of presentation undertaken in this series, the design of which is of course to aid the student in sufficiently charging his memory for examination purposes. From this point of view the book is a very successful addition to the series, and has evidently been compiled with much care and from the most reliable sources. To satisfactorily con-

dense a subject such as this is no easy task; the author has throughout successfully brought out the facts of most importance, and his grouping of these facts is clear and to the point. Apart from debatable matters of practice, there are a few statements which call for remark. To withhold mercury until the appearance of secondary symptoms has decided the diagnosis of syphilis is by no means a rule to be invariably followed. In a modern classification of tumours one expects to find some mention of the endotheliomata and some notice of the fact that carcinomata arise from certain of the structures originating in mesoblast. On p. 96 the statement is made that Hodgkin's disease is characterised by marked blood-changes, consisting of a great increase of leucocytes, and is distinguished from lymphatic leucæmia by the character of the leucocytes; both these statements require correction. In trephining for middle meningeal hæmorrhage, the point usually to be selected is 1½ inch behind the external angular process and 1½ inch above the zygoma, not 1½ inch above the angular process. In the description of concussion and compression of the brain, the differential diagnosis between the two conditions might be made clearer. Pancreatitis is a well-recognised condition which might have been mentioned. Direct inguinal hernia is said to occur only in old people; in reality, most of the examples occur between the ages of forty and fifty. The student should be taught to-day that a strangulated hernia requires operation, and that the so-called taxis is rarely justifiable; he should also be taught that disinfection of the sac is an important item of the operation. It is not necessary here to discuss methods of treatment recommended. The points to which attention has been drawn in no sense contradict the opinion that the book is reliable and suitable in every way to the purpose for which it is intended.

K. W. Monsarrat (Liverpool).

Handbook of Diseases of the Ear. By Richard Lake, F.R.C.S., Surgeon to the Royal Ear Hospital. Pp. x + 232, with 3 coloured plates and 54 figures in the text. Publishers: Baillière, Tindall and Cox, London. Price 7s. 6d. net.

Nothing but the highest praise can be accorded to this addition to the literature of otology. Mr. Lake has made good use of his extensive experience in aural work in producing this useful and concise 'Handbook of Diseases of the Ear.'

It is noticeable that although the first chapter is devoted to a brief description of the more important anatomical facts, yet no mention is made of the physiology of hearing; this, however, which at first sight looks like an omission, may be intentional on the part of the author, by reason of the obscurity and variable theories on the subject. The chapter on the estimation of the acuteness of hearing is especially well written and valuable; the many useless tuning-fork tests usually mentioned in text-books being wisely left out; the importance of correct use of tuning-forks for the diagnosis and prognosis of deafness cannot be over-estimated, and it is this which is perhaps the most difficult and confusing part of otology to the student. The description of the so-called radical mastoid or complete post-aural operation which is done so extensively nowadays for chronic suppurative conditions is probably the best which can be obtained.

In conclusion, mention must be made of the excellent illustrations distributed throughout the book and of the valuable appendix of prescriptions.

R. Sturgeon Cocke.